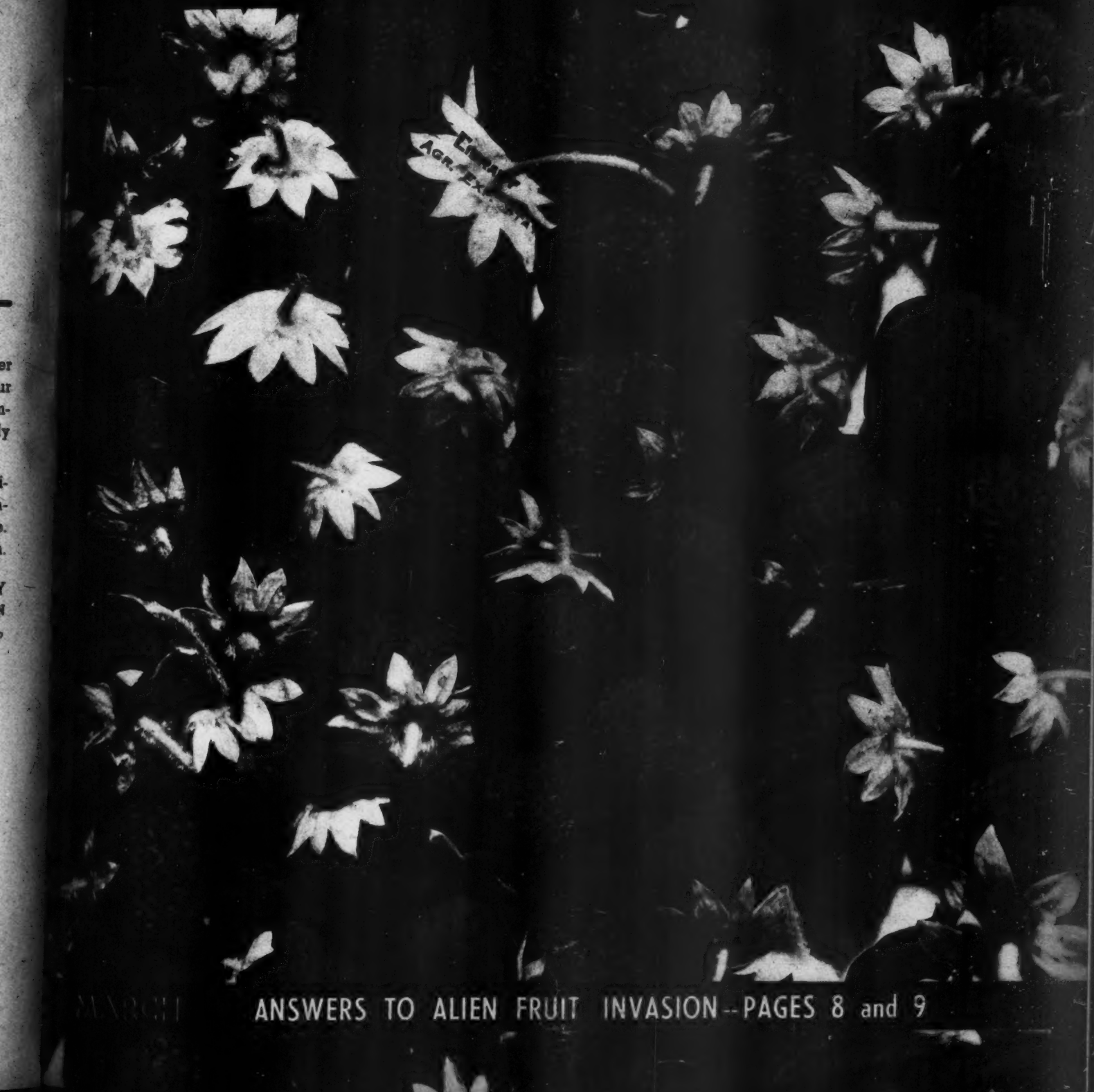


V.61
No.3

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MARCH

ANSWERS TO ALIEN FRUIT INVASION--PAGES 8 and 9

Firestone

**FIRST
CHOICE OF
FARMERS**

GROUND GRIP TIRES

IT WAS Firestone that developed the first practical pneumatic tractor tire and put the farm on rubber. It was Firestone that discovered and patented the principle of triple-braced traction

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FIRST in Cleaning—The famous Ground Grip tread cleans itself automatically in all soil conditions.

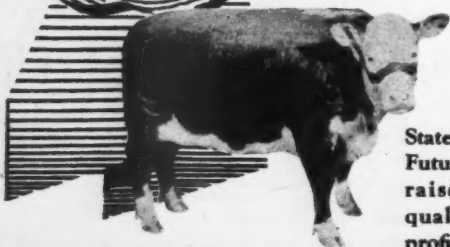
FIRST in Long Life—With triple-braced traction bars the tread is held firm even under the hardest pulls. That means long, even wear and maximum resistance to cutting, snagging and wiping.

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AMERICAN FRUIT GROWER

PAGE 3

NEW 1941 CHEVROLET TRUCKS

***Most Modern..Most Powerful
Trucks of Low Price!***



You'll find more new features . . . more new improvements . . . more new advancements . . . in these new 1941 Chevrolet trucks than you'll find anywhere else in their price field. . . . And remember, they're the most powerful of all low-priced trucks!

Of one thing truck buyers are convinced . . . they're saying it with *buying orders* again this year . . . and truck buyer after truck buyer will pass this word along to you:

You'll get more work—done better—at lower cost for gas, oil and upkeep over the years—out of these big, thrifty, dependable Chevrolet trucks!

That's because they have the *most*

powerful truck engines in the entire lowest-price field . . . because they're the most *modern, up-to-date* low-priced trucks manufactured today . . . and because they're designed, engineered and built to *out-pull, out-value* and *out-save* all other low-priced trucks!

Convince yourself of these facts. Decide with a demonstration drive! See or phone your nearest Chevrolet dealer—*today!*

CHEVROLET MOTOR DIVISION, General Motors Sales Corporation, DETROIT, MICHIGAN

★ TWO NEW VALVE-IN-HEAD ENGINES . . . STANDARD: 174 FOOT-POUNDS OF TORQUE—90 HORSEPOWER . . . "LOAD-MASTER": 192 FOOT-POUNDS OF TORQUE—93 HORSEPOWER ★ NEW RECIRCULATING BALL-BEARING STEERING GEAR ★
NEW, MORE COMFORTABLE DRIVER'S COMPARTMENT

*Optional on Heavy Duty models at extra cost.

60 Models—On Nine Longer Wheelbases

OUT-VALUE...OUT-PULL...OUT-SELL!

MARCH

VOL. 61

1941

No. 3

AMERICAN FRUIT GROWER

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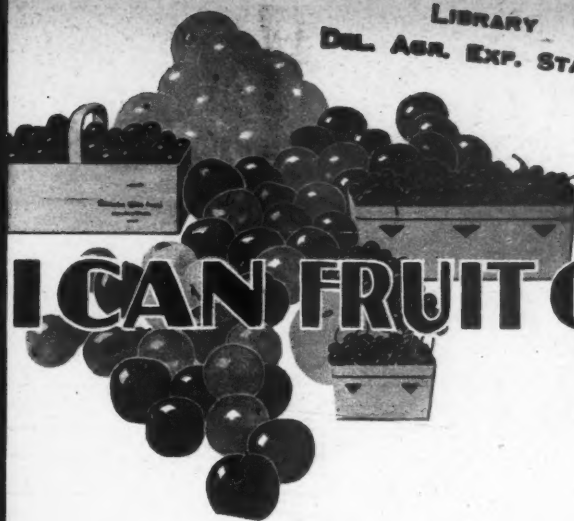
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SALUTE TO THE SALESMAN . . .

FROM simple beginnings the fruit industry of the United States has become a very complex one. Its ramifications extend from the orchard to the market place, to the university, to the press, and to greatly diversified industrial enterprises. Beginning in March and extending throughout the year, representatives of these industries will call on orchardists, both individually and collectively, and offer their services. These may be in the form of new sprayers, insecticides, fungicides, fertilizers, construction materials for storages, power equipment for the farm, and so on through a long line of indispensable supplies which the orchardist must use.

We salute this group of men who are rendering a high service to the orchardists. They are usually most painstaking in knowing the worth of their products and presenting them in strict accordance with the teachings of authorities at the experiment stations and colleges. They are a vital factor in this complex industry and are a distinct addition wherever fruit growers meet.

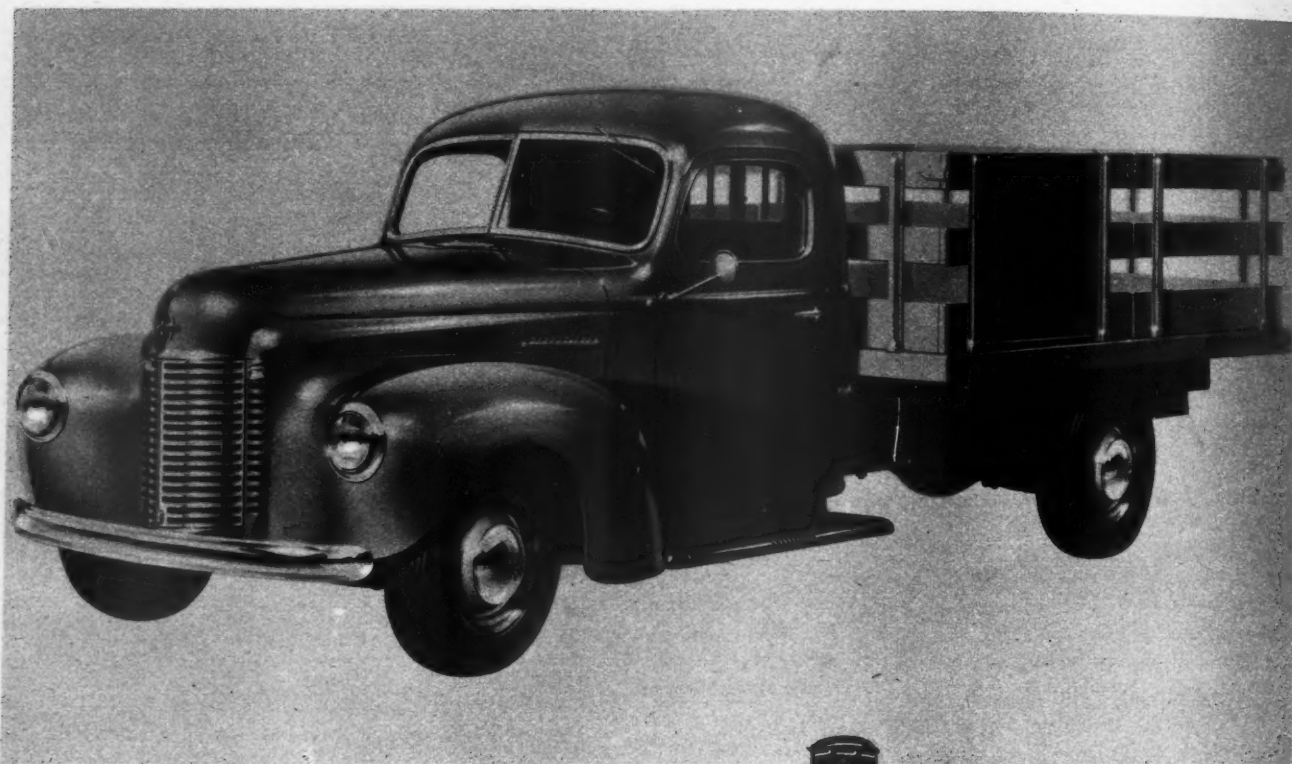
HELP HOLD THE UMBRELLA . . .

INDIVIDUALIST though the orchardist may be, the future of the fruit growing industry lies in organization. Group action in advertising and marketing is absolutely necessary to meet the competition of other food products. Progress is being made in the building up of active sectional and local fruit marketing groups, but even greater progress could be made if all growers would join up. The holdout grower is selfishly letting his neighboring orchardists "hold the umbrella over him." Long years ago Bacon wisely said, "I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto."

MICHIGAN APPLE ADVERTISING ACT UPHELD . . .

THE DECISION of the Michigan Supreme Court in declaring constitutional the sale of stamps to raise funds for apple advertising is of great national significance as well as a triumph for the Michigan State Apple Commission. Another hindrance to apple promotion and advertising has been removed. The Michigan Supreme Court has cleared the way for real progress in stimulating demand for apples by organized advertising and promotion.

ALL-TRUCK TRUCKS *BETTER THAN EVER!*



The International K-3 with stake body . . . new in appearance and new in economy and performance, too!

The NEW Internationals!

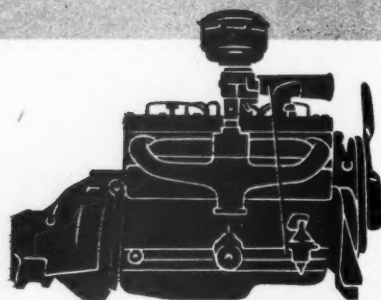
International Harvester is proud to present "The New Internationals" . . . beautiful in appearance, powered beyond requirements, engineered for unbeatable economy.

The heart of the remarkable economy in all the light-duty models is the new International-built Green Diamond Truck Engine . . . exclusively International. The smooth performance of this power-giant, plus its sensational low-cost operation, make these new K-Line Internationals big money-savers on any hauling job.

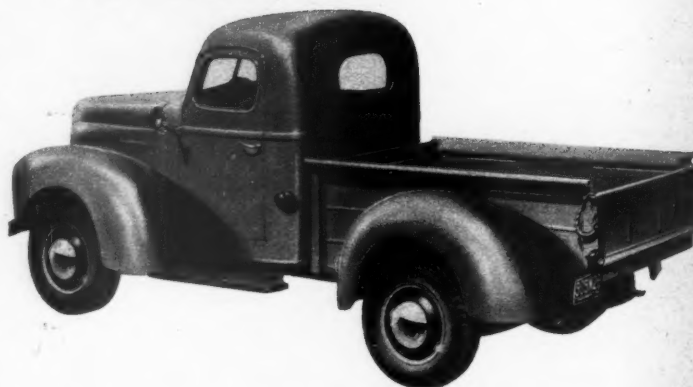
There are new double-anchor hydraulic brakes; long, easy-riding springs; sealed-beam headlights; safety glass throughout; a new all-steel Safety Comfort-Cab; and many other features.

Phone any International Dealer or Branch for a NEW International demonstration. And write for a catalog.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue, Chicago, Illinois



The sturdy, economical Green Diamond Engine is unusually rugged. In its manufacture no compromise is made with passenger car construction.



International all-steel pickup bodies are designed for utmost ease and speed in loading and unloading. Attractive deep-drawn fenders are one-piece stampings rigidly held in position. Stake pockets are provided on sides at front and rear.

INTERNATIONAL TRUCKS

THE CASE FOR COVER CROPS IN THE ORCHARD

By J. H. GOURLEY
Ohio Agricultural Experiment Station

SOMETIME a history of fruit growing will be written, but not yet. The industry must go through more vicissitudes, both from a production and an economic standpoint. But when it is written, one of the intriguing chapters will be on the management of the soil. Sometimes I wonder whether it will sound more like revolution than evolution.

Already we have seen that fruit trees were grown in sod land, along fences, and under mulch. Then intensive cultivation was introduced so that not a spear of grass was to be found, so well kept was the orchard! In those days (not so long ago) I suspect that the higher the cloud of dust following the powerful tractor the more grandiose that modern orchardist felt. The use of cover crops or less cruel tillage followed. Then a wave of 'sod culture' again, accompanied by some sort of a mulch or soil conserving system. After this system has had its fling, will we discover a sufficient objection to it to turn about in a forthright manner and return to more tillage again? I wonder.

As evidence that the mulch system was in use a century or more ago, I quote a statement by the distinguished horticulturist of the time, Marshall P. Wilder, in 1856: "Among the arts of modern cultivation, universal experience attests to the great advantage of 'mulching' the soil around fruit trees, as a means of fertilization, and of preservation from drought and heat, so common with us in midsummer. In illustration of this, experiment has proved that on dry soils, where the earth has been strewn with straw, the crops have been as large without manure as they were with it where evaporation has disengaged the fertilizing elements of the soil."

But, in any event, there are plenty of cultivated orchards, especially with stone and citrus fruits, and in most such cases in the United States and Canada cover crops are used. Hence, any student of orcharding must give attention to the kinds and frequency of their use.

The use of a green manure crop (termed a cover crop by Prof. L. H. Bailey in 1893) is not new. It dates back to a very early time. Mention is made of the practice several centuries B.C. in China, and the ancient Greeks and Romans spoke of legumes as valuable for manuring corn (probably wheat) land.

"The proof of the pudding is in the eating." An old adage and one with many applications. Do we have evidence that cover crops really improve orchard conditions? There was a time when I thought the evidence was scanty or absent. I remember Dr. J. P. Stewart of Pennsylvania once told me that his experiments did not bear out the teachings of those who advocated cover

(Continued on page 19)

RYE AND VETCH?



Rye comes as near being a universal cover crop as any. It makes a fast growth in spring, its greatest advantage and disadvantage. If the land is wet and difficult to get on, the rye may joint out and mature and as a result dry the surface soil excessively. It is an ideal winter crop where erosion is a factor. Commonly sown with vetch, as illustrated.

ALFALFA?



Where soil and climatic conditions are favorable for a good stand and quick growth, alfalfa will be found a satisfactory cover crop. It endures rough treatment and by growing deep roots endures drought. Because of its deep rooting habit it can usually be grown to better advantage in the young orchard than in older plantings.

BUCKWHEAT?

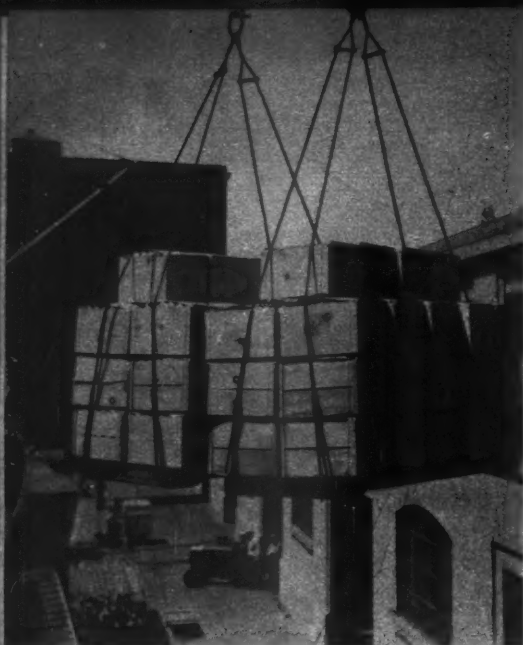


Buckwheat finds wide usage as a summer cover crop where the climate is moist and cool, but it is very sensitive to frost. It does well on infertile sandy loams but the land must first be fertilized. It may be seeded as late as the latter part of July. This crop is a valuable source of honey in the fall, which gives it added value as an orchard crop.

SUDAN GRASS?



Where a large amount of herbage is desired in the orchard, Sudan grass may answer the purpose. This summer cover crop is somewhat objectionable in dry years due to competition with the fruit trees for moisture, but it makes a heavy yield if well fertilized. It is seeded at the rate of 25 to 30 pounds per acre.



ANSWERS TO ALIEN

TWO GROWERS, TWO FEDERAL AU ORGANIZATION OFFICIALS P ON THE ALL-IMPORTANT IM EXCLUSIVE STATEMENTS TO AM

BETTER MARKETING ESSENTIAL

By CARL G. WOOSTER
New York State Grower

WHILE the trend of apple production in the United States has been downward for several years, the decrease has not kept pace with our lower per capita consumption and gradual loss of export markets. This year with a less than normal crop, but with exports cut off, the situation becomes serious. It becomes serious not only because of the volume of exports lost, but because we are left with varieties and sizes not suited to our domestic trade.

About one-half of one per cent of our supplies have come from Canada and these have been varieties and sizes preferred by our trade. Normally, we export more apples to Canada than we import, and even now the balance of trade in fruits and vegetables with Canada is many millions of dollars in our favor. This in itself is a help to the purchasing ability of our home people.

It is true that the Canadian supply of apples is a greater potential threat than that of Argentina or Australia. Differences in marketing season and distance are our protection from the latter.

The problems of our apple industry have been evident for several years past and we should read the handwriting on the wall. We may never regain our lost exports. We must recognize that our greatest competition comes from both citrus fruits and vegetables, and if we are to survive, we must center our attention upon better marketing of only our better varieties.

PAGE 8

CANADIAN GROWERS' HELP NEEDED

By C. C. TAYLOR
Michigan Grower

ONE DAY last November I was trying to sell apples to one of the chain stores in my town and discovered some Canadian apples in their stock. I suggested that they did not seem to appreciate the grocery purchases which my own family and the families of other apple growers were making of them. I pointed out that when they buy local apples, a part of the money is returned to them when local growers buy groceries. They assented, and I have not seen Canadian apples in my town since. Later reports from the U.S.D.A. stated that only about 650,000 bushels of Canadian apples had come in.

About mid-November the 1940 citrus crop of 120,000,000 boxes hit the market. It seems very clear to me that this vast tonnage, supported by huge advertising and publicity financed by assessments on each box, is infinitely more dangerous to my apple business than are Canadian apples. Since apple growers as a group have failed over 30 years to do anything about competition like that, I find it difficult to become alarmed over the importation of a few apples from Canada and the Western Hemisphere in times like these.

However, since this is the only country to which Canada can now ship its exportable apple surplus, we should continue to ask the Administration to protect us against the dumping of Canadian apples. We shall have to increase our removal of unpopular varieties and marginal orchards, and I think we have the right to ask that Canadian growers do likewise.

AMERICAN FRUIT GROWER

PROBLEMS INVOLVED IN FRUIT IMPORTS

By F. A. MOTZ
U. S. Department of Agriculture

THE WAR has operated to divert exportable surpluses of apples and pears of other countries, particularly Canada and Argentina, into our own domestic market.

The United States had the alternative of challenging Canadian imports and inviting retaliatory action, or of seeking by friendly exchange of information to find a basis upon which a satisfactory arrangement could be reached. The first course was unthinkable in a time when the interests of the two countries are so closely interwoven. The second course, therefore, was attempted and proved successful. Canada voluntarily fixed a limit on exports to the United States at 650,000 bushels and took steps to dispose of the remaining surplus internally.

A similar problem existed in case of Argentine pears, and a similar course has been followed. The crop of Argentine Williams this year was reported to be about the same size as last. Prospective exports, however, to the United States were reported to be substantially higher than a year ago. Following discussions between representatives of the respective governments, the Argentine Government has voluntarily fixed a limit of 300,000 boxes on exports up to April 1.

There is nothing, at least at the moment, to indicate a movement of Australian or Argentine apples to United States markets. Should any such shipments materialize, it is not believed that they would be of sufficient significance to affect our market one way or another.

MARCH, 1941

LIN FRUIT INVASION

DERAL AUTHORITIES AND TWO FRUIT CIAS PRESENT THEIR VIEWS TANT IMPORT SITUATION IN S TO AMERICAN FRUIT GROWER

READJUSTMENTS NEEDED IN APPLE INDUSTRY

By PORTER R. TAYLOR

Surplus Marketing Administration

THE PROBLEM of Canadian apple imports results directly from the broader problem of the closed European markets. If these markets prove to be permanently lost to us, some major readjustments will have to be made by American apple growers.

It will be necessary for the apple industry to find a way to handle the crop so as not to flood our domestic fresh fruit markets, and in order to reduce the supply of apples not needed on the fresh market, the by-product outlets must be expanded. To limit the supply, many undesirable varieties of apple trees should be removed. Only the most desirable grades of apples should be offered for fresh sale, and an effort should be made to move these apples into consumption within their normal storage life.

The necessary limitations on the sale of apples in their fresh form will be made much more readily if by-product outlets are available which will pay the approximate cost of production for the lower grades. Experience to date would indicate that good apple juice can be marketed at prices which should return growers a more satisfactory price than is secured from utility grade in large crop years. This is especially important because quality juice can be made only from sound apples, the lower grades of which present a difficult marketing problem.

These necessary adjustments can be attained only through group action. Unless the apple growers, themselves, are willing and ready to assume this responsibility, very little improvement can be expected in the market situation or in grower returns.

BURDEN TOO GREAT FOR APPLE GROWERS

By C. E. CHASE

Washington State Apple Advertising

THE APPLE growers of the United States are in entire sympathy and approve the United States Government's Good Neighbor Policy with the countries of the Western Hemisphere and the Democracies engaged in war.

It is realized that funds received by neighboring countries from apples imported into the United States are spent in this country. However, the industry feels that the cost, as well as the profits of the war should be widely spread. Under present import arrangements the apple industry is bearing a disproportionate share of the cost of the Good Neighbor Policy and a continuation will mean that thousands of growers will not only be unable to pay taxes and material and labor costs, but will be bankrupt and will seek other means of making a living or be added to Government relief rolls.

It is believed that the remedy should be placed in the hands of the Surplus Marketing Administration. The necessary legislation should be enacted enabling the SMA to have funds and the authority to make purchases at the port of entry of all apples permitted to be imported into the United States and dispose of these so they would not enter domestic trade or interfere with the orderly marketing of the nation's apple production, whenever apples are a surplus commodity or are not bringing a reasonable profit to the producers. Such an arrangement would enable the United States Government to permit such import of apples as was necessary to fully carry out the Good Neighbor Policy and at the same time work the least hardship on American producers.

"HE WHO CARETH NOT FOR HIS OWN . . ."

By CARROLL R. MILLER

Appalachian Apple Service, Inc.

HOW many "rights to the jaw" can the apple industry absorb and still remain a going industry?

We are adjusting ourselves to the intense competition resulting from the huge jump in national production of fresh fruits and vegetables—from 12,000,000 tons in 1920 to 20,000,000 tons in 1939.

We are managing, somewhat amazingly, to absorb the stoppage of exports, which threw 8,000,000 to 10,000,000 more bushels into domestic usage.

We seem to be surviving under the new Federal-and-State wage-hour and control legislation which is increasing stiffly our costs of production at a time when the fixed, rapid trend is toward diminishing returns and increased cost of production.

Apple growers are working hard and earnestly to cope with these new conditions—by apple promotion, advertising, better fruit in better packages, national organization, cull tree removal, etc.

But the apple industry cannot, on top of these, absorb the surplus apples of Canada, South America and Australia. To be "good neighbor" to the growers of these nations, as seems contemplated by the Administration, means wrecking the future for hundreds of thousands of American families dependent upon "The King of Fruits" for their livelihood, unless imports of apples from these countries are strictly limited to minor amounts.

"He who careth not for his own is worse than the heathen."



IN FOCUS AT WEST VIRGINIA MEETING

Carroll R. Miller (left), Martinsburg, W. Va., secretary of the West Virginia society and manager of Appalachian Apple Service, Inc., talks with Virginia grower Philip H. Gold of Winchester.



Peach grower R. W. McNeely of Columbia, S. C., took a busman's holiday at the West Virginia meeting. He is shown here inspecting rootstocks for peaches.



Above, top—Dan Williams (left), Romney, W. Va., discusses fruit growing activities with Hugh Prettyman (center), Inwood, W. Va., and Paul Lingamfelter, North Mountain, W. Va. Above—L. Clark Hoge (left), Leesburg, Va., talks with F. W. Miller, Inwood, W. Va. Below—J. B. McLaughlin (left), Charleston, W. Va., commissioner of agriculture, expresses his views to Dr. R. S. Marsh, head, West Virginia Department of Horticulture.

AMERICAN FRUIT GROWER PHOTOGRAPHS

Right—Walker Bond (left), Winchester, Va., president of Virginia Horticultural Society, and Burns Huyett, Charles Town, W. Va. Below, left—James H. Myers (left), Harpers Ferry, W. Va.; S. J. Hockensmith (center), also of Harpers Ferry, and G. R. Canby, Silver Spring, Md. Below, center—L. P. Miller (left), Paw Paw, W. Va., and E. R. Cox, Keyser, W. Va. Group, left to right—John F. Ambrose, Charles Town, W. Va.; E. A. Leatherman, Rada, W. Va.; J. H. Dutrow, Charles Town, W. Va.; Judge F. S. Tavenner, Woodstock, Va.; E. L. Goldsborough, society vice-president, Shepherdstown, W. Va.; and F. A. Quitsland, Washington, D. C.



STRAWBERRY VARIETIES OLD AND NEW

By GEORGE M. DARROW

Bureau of Plant Industry
United States Department of Agriculture

IN THE October issue of AMERICAN FRUIT GROWER, a list of the important varieties of strawberries of the United States, based on nursery sales, was given. Such a list, of course, does not correspond exactly with a list of varieties by acreage, for plants of the older important varieties in some large commercial sections are raised by growers in their own fields or are bought from neighbors. The following list shows the approximate rating of varieties by acreage at the present time (as based on the best available information) as compared with the nursery sales list published in October.

Rank	Varities	Per cent of U.S. in acreage	Standing in Nursery sales
1	Blakemore	25	1
2	Klondike	14	3
3	Aroma	11	9
4	Marshall	10	—
5	Howard 17 (Premier)	9	4
6	Missionary	5	2
7	Catskill	4	10
8	Dorsett	4	8
9	Fairfax	3	11
10	Dunlap	2	5
11	Klonmore	2	—
12	Nick Ohmer	1	—
13	Joe	1	—
14	Chesapeake	1	—
15	Beaver	1	—
16	Mastodon	—	6
—	Gem	—	7
—	Others	7	—

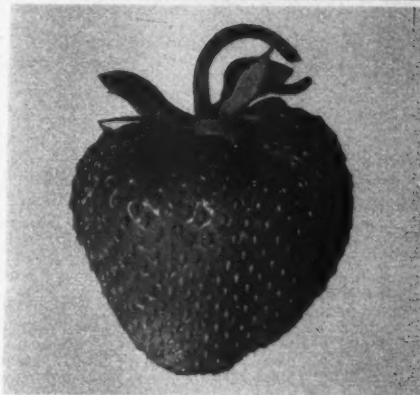
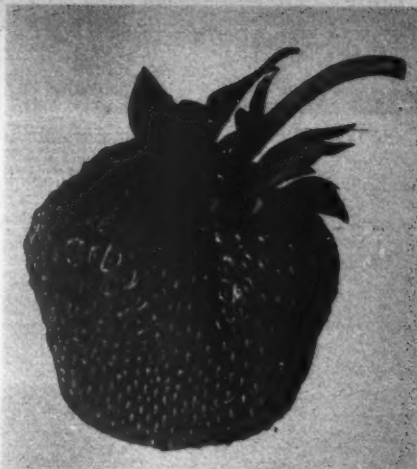
Blakemore, the leading variety both in acreage and nursery sales, has continued to replace Klondike in the central Mississippi Valley region.

Now it constitutes about 25 per cent of the total acreage of the country. It is the leading early-season shipping variety from Delaware to North Carolina westward to Oklahoma. Its serious weakness is in sporting to plants having variegated foliage. However, very large stocks of the so-called yellows-resistant strains have been propagated and planted in recent years. This has made it possible for growers to raise the Blakemore with relatively few yellow or variegated plants.

Klondike is still in second place in the country because of the large acreage of this variety in Louisiana where the Blakemore has not succeeded. However, if the Klonmore (discussed below) succeeds, the acreage of Klondike may drop rapidly in the next few years.

Aroma has kept its place as the leading variety in Kentucky, Missouri, and southern Indiana. With the recent increase in acreage in those states it ranks about third in the country. Possibly the Redstar (discussed below) should be tested by Aroma growers.

Marshall retains its importance in the country because of the large acreage of it in western
(Continued on page 22)



Two berries of the Redstar, a firm, showy, high-flavored variety of the latest season, are shown at top. This variety is suggested for trial from Virginia to Kansas and northward. Being extremely late, it should be used to extend the season of strawberries.

A quart of the Maytime (above), a very early, large, firm, high-flavored variety for Maryland and regions with similar conditions.



A basket of the Massey (N.C.613), a firm, large, late strawberry of high flavor for North Carolina and regions with similar conditions, is shown on left. To the right is the Missionary.

AFTERMATH OF MIDWEST ARMISTICE DAY FREEZE

Surveys of Damage in Missouri, Kansas, Iowa and Nebraska

HIBERNAL STOCK VERSUS VIRGINIA CRAB

HIT hard by the sledge-hammer blow of the Armistice Day freeze, growers in the Missouri River Valley area have been anxiously trying to ascertain the extent of damage to their trees. Surveys were quickly made but it was difficult to judge how bad the damage was because signs of injury often do not appear immediately. Here is the latest, possibly more accurate picture based on up-to-date surveys made by experts in horticulture from four of the states hardest hit.

General indications are that the Hibernial stock withstood the cold better than the Virginia Crab. According to reports received Virginia Crab has been injured somewhat but will probably make a good recovery. There have been no reports of injury on Hibernial and many believe it came through unhurt.

MISSOURI

By T. J. TALBERT

Missouri College of Agriculture

THE cold wave which struck the Missouri River Valley last November caused considerable damage to fruit crops generally. This was particularly true in north Missouri, northeast Kansas, Nebraska, Iowa, and northwestern Illinois. The injury to fruit trees ranges all the way from the killing of the tender terminal twigs to the killing of peach, plum, and other fruit trees by injuring severely crotches of large branches and the base of the trunks near the ground. Apparently the farther we go north in this area, the more severe the injury.

Unusually mild weather preceded the sudden drop in temperature. Trees had not developed the usual maturity for the season. The injury, therefore, was much worse than it would have been had cooler and more normal weather prevailed. The temperature ranged all the way from slightly below zero for the more northern districts to about five to six above zero for the central and southern sections on November 15.

For central Kansas, Missouri, and Illinois the damage does not appear to be so severe, as fruit buds of all species do not show material injury. Peach, plum, and sweet cherry trees, however, have been seriously injured at the base of the trunks in many districts. Apple and pear trees seem to have escaped serious damage, although there is some bud, twig, crotch, and trunk injury to be found in every planting. Young non-bearing trees seem to have withstood the cold as well as bearing trees. Crop prospects, therefore, for the Central Missouri Valley have not apparently been greatly reduced for 1941.

Reports from the southern half of Kansas, Missouri, and Illinois indicate that the injury done is considerably less than that found in the central area, although there was not much difference in temperature. Some of the more tender species like peaches and Japanese plums and even apples in some sections were damaged. The loss, however, should not be serious enough to lessen the outlook in this area for a good crop of all fruits in 1941.

If the inner bark at the base of the tree
(Continued on page 24)

KANSAS

By WM. F. PICKETT

Kansas State College

ARMISTICE DAY in 1940 will long be remembered by fruit growers of the Missouri River Valley area and the lower Arkansas River Valley in Kansas because on that day a blizzard struck that section of the country and caused more damage than any other blizzard in the horticultural history of the region.

The weather during the late summer and autumn favored late growth of the fruit plants and no severe killing frosts had occurred to harden off the plants. In general, the temperatures had ranged from the 40's and 50's at night to the 60's and 70's during the daytime for the 10 days preceding the storm. During the latter part of October the maximum daily temperatures had ranged in the upper 80's. Rainfall had been well distributed and conditions were favorable for plant activity.

Practically all trees were in full foliage. On Monday morning the temperature was down to 12 above zero at Manhattan and on Tuesday and Wednesday mornings the minimum temperatures in eastern Kansas ranged from one above to four below zero. The minimum temperatures for the rest of the week were lower than 10 degrees.

Although winter injury to fruit plants is a problem which confronts growers in this section of the Great Plains, the damage to our commonly cultivated fruit plants is usually not so severe as that which occurs more frequently in the areas north and east of Kansas. As this is being written, February 10, the leaves are still strongly attached to many varieties of fruit trees and any attempt to take a complete inventory of the damage caused by the blizzard would be nearly an impossible undertaking. However, certain observations have been made in the eastern part of the State and it is apparent that some kinds of trees have been killed entirely, others have been injured little if any, with most of the trees coming in between those two extremes and showing varying degrees of damage. On the dark side of the picture are the cherry and peach trees, and many growers are of the opinion that most of the trees of these fruits have been

(Continued on page 24)
AMERICAN FRUIT GROWER

NEBRASKA

By E. H. HOPPÉ

University of Nebraska

ZERO temperatures in the middle of November are not unusual in Nebraska and ordinarily fruit growers pay no attention. But when you can pick ripe tomatoes from the garden on November 10 and then on November 11, the temperature goes down to zero and does the same thing for four nights in succession, it is bound to disturb the peace of mind of even the most optimistic fruit grower. Calls and letters started coming into my office as soon as the frozen plants had thawed. The fruit growers' meeting of the State horticultural society in late November turned rapidly from a discussion of "Pre-harvest" sprays to a round table discussion of winter injury. There was little argument about the killing of most of the fruit buds, but there was a decided difference of opinion as to extent of trunk damage. A survey of the injury was requested of the extension horticulturist and this was made covering Missouri River counties, Richardson, Nemaha, Otoe, Cass, Sarpy, Douglas, and Washington. Here is a summary of the findings in general.

Apples: Yellow Transparent and
(Continued on page 25)

IOWA

By B. S. PICKETT

Iowa State College

BEGINNING on November 11, 1940, a blizzard swept over the Dakotas, Nebraska, Kansas, Minnesota, Iowa, Missouri, and Illinois. It was accompanied by winds of high velocity ranging from 40 to 55 miles per hour, some snow, and rapidly falling temperatures which reached 15 degrees below zero to three or four degrees above zero in those parts of the area where orchards are grown. The storm lasted four days, the temperatures gradually rising and the wind subsiding. The snowfall was not heavy. Widespread killing of fruit buds and fruiting plants resulted.

Although the storm was severe, the temperatures were not low enough to have caused such serious and widespread damage in most years. The primary cause for the injury was immaturity of wood and buds rather than inherent ability of the damaged varieties to withstand low temperatures. The long continued high wind seems not to have been a primary contributor to the injury, because the injury in the case of apple trees is chiefly in the trunks, young wood one to three years old, and the buds. The framework branches and those of intermediate size were not seriously injured.

In Iowa, peach and apricot trees were killed to the ground over an area extending from the Missouri River eastward nearly to the Mississippi River. Sour cherries in the west half of the State were killed except in sheltered spots. Damage to apple orchards was extensive and much replanting will be necessary to replace the damaged trees. Hardy plums escaped injury; tender varieties were killed. Raspberries were generally killed to the ground, and strawberries were severely injured except where mulched. Currants and gooseberries escaped injury. Grapes suffered only a limited amount of fruit bud killing and little damage to the wood.

The symptoms of the trunk injury on apple trees were deep browning (apparent killing) of the live bark (phloem) all the way to the wood (xylem); no visible evidence of live cambium cells; sometimes some degree of browning of the sapwood;

(Continued on page 25)



BLACK LEAF 40

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CAMERA

AT
PENNSYLVANIA
SOCIETY
MEETING



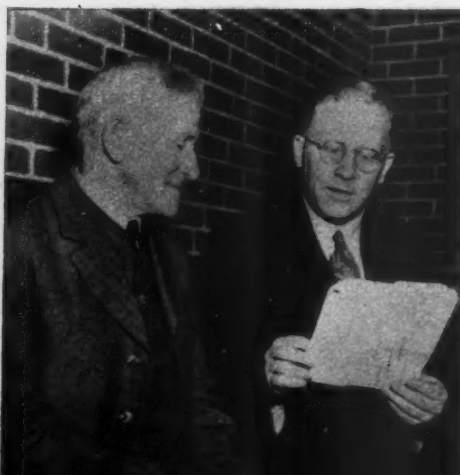
The new and the old get together with the secretary. Dr. H. W. Skinner (center), Chambersburg, Pa., new president, and J. A. Runk (right), Huntingdon, Pa., outgoing president, confer with society secretary J. U. Ruef, State College.



Above, top, left to right—Dr. R. D. Anthony, State College, Pa.; J. Eric Linde, Allentown, Pa.; and Frederick E. Griest, Flora Dale, Pa. Above, left to right—C. F. Gillan, St. Thomas, Pa.; H. M. Anderson, New Park, Pa.; and E. B. Mitchell, Harrisburg, Pa.

AMERICAN FRUIT GROWER PHOTOGRAPHS

Right—I. K. Dutweiler (left), Lebanon, chats with Peter R. Boltz, also of Lebanon, and Simon R. Snyder, Ephrata, Pa. Far right—John A. C. Ziegler (left), looks at new cherry variety held by H. B. Faber. Both are from York, Pa. Below, left—W. O. Bingham, St. Thomas, Pa., examines apples at the fruit exhibit. Below, center—C. B. Snyder (left), Ephrata, Pa., treasurer of the society from 1928 to 1938, examines program with Elmer R. Snyder, Fairview Orchards, Florin, Pa. Below, right—W. J. McNitt (left), Milroy, Pa., enjoys the remarks of F. G. Reiter, Mars, Pa.



STATE NEWS

WEST VIRGINIA—Unseasonal warm and sunny weather drew a record crowd of over 400 growers to the 48th convention of the West Virginia Horticultural Society held February 12 and 13 in Martinsburg.

Managed by Carroll R. Miller, secretary, the meeting presented to growers answers to perplexing fruit growing problems, speeches on subjects of current interest, and fun and laughter at the annual banquet. Highlight of the banquet was the presentation of the picture of the original Grimes Golden tree to the society by Secretary Miller on behalf of Mr. and Mrs. S. W. Moore of Gallipolis and Dayton, Ohio.

Presiding at the meetings was Vice-president E. L. Goldsborough of Shepherdstown, who substituted for President W. C. Van Meter of Petersburg, who was ill.

Dr. R. D. Anthony of State College, Pa., offered a number of rules to growers for producing high yields. Some of them were: "A sizable top is needed to produce a sizable crop. This year's terminal growth makes spurs for the crop two to three years from now. It takes a healthy leaf to produce a healthy bud. If you don't have five inches of terminal growth on York or 10 to 15 inches on Stayman, it's time to start worrying."

Stanley Fulton of Hancock, Md., told the growers how he was able to produce apples for 22 cents a bushel excluding packaging cost. He said he sprays thoroughly and stops spraying after the second cover so he can omit washing. He said trees must be sprayed thoroughly and asserted that this won't be done unless the spraymen are watched to see that they do a good job.

Other speakers on the program included Dr. W. S. Hough, Winchester, Va.; Dr. F. P. Cullinan, Dr. L. P. Batjer, and Dr. D. F. Fisher, all of U.S.D.A.; Dr. Edwin Gould, West Virginia Experiment Farm, Kearneysville; Dr. R. S. Suds, Martin A. Abrahamson, and R. S. Marsh, all of West Virginia College of Agriculture; Truman Nold, National Apple Institute; B. Woods Rannells, State Department of Agriculture; and Dr. Ford Quitsland, Farm Credit Administration.

The society passed four resolutions urging:

1. That payments to growers on the marginal apple tree removal program be increased to \$20 per acre and 50 to 75 cents per tree.
2. That violations of U.S. apple grades be prosecuted more vigorously by Federal and State government inspectors.
3. That U.S.D.A. limit imports of apples to amounts based on average imports the past 10 years from each country and which will not affect adversely the net returns to the apple grower.
4. That horticulture and agriculture be exempted from the proposed West Virginia State wage and hour law.

MINNESOTA—Originally scheduled for early November but postponed because of the Armistice Day storm which paralyzed transportation, the annual meeting of the Minnesota Fruit Growers Association was held January 24 at University Farm, St. Paul.

F. D. Turner of Red Wing was elected a director for a three-year term, and the following directors were re-elected for a similar term: Fred W. Braden, Fred Blomberg, Henry W. Leidel, and S. M. Thimsen. Officers are elected by the directors in alternate years, the present officers holding over until the next annual meeting.

A special meeting held on January 25 at University Farm in connection with Farm and Home Week, for the purpose of discussing fruit marketing problems, resulted in proposals for the enactment of an apple labeling law in Minnesota similar to the Missouri law of 1939. George N. Pabst of St. Paul Park was named chairman of a committee to study these proposals. He is Minnesota's representative on the Planning Committee of the National Apple Institute.

Other proposals discussed included one to establish an evening market for berries in Minneapolis during the height of the season, and another by George W. McClelland of Duluth to develop a State-wide marketing plan for the Minnesota berry crop. Committees will report on March 27 at the annual Horticulture Short Course at University Farm.

Two prominent out-of-state speakers will be on the Horticulture Short Course program. Dr. Roy E. Marshall of Michigan State College will discuss apple juice manufacture, also permanent sod covers for orchards on March 27. The following day H. J. Rahmlow, secretary of the Wisconsin State Horticultural Society, will discuss new fruit varieties and the operation of spray rings. A complete program may be obtained by writing to the Director of Short Courses at University Farm, St. Paul.—J. D. WINTER, Sec'y, Mound.

PENNSYLVANIA—Visitors to the State Horticultural Society's 82nd annual meeting held in conjunction with the Farm Show in Harrisburg, January 21-23, were as much surprised by the vigor and lack of restraint with which Pennsylvania fruit growers intelligently discussed their own problems as they were amazed by the huge size of the Farm Show which covers 14 acres of ground.

In the true Pennsylvania tradition of William Penn and Benjamin Franklin, growers were not afraid to give their own opinions on how they thought various practices should be handled, which spiced the meeting with interest and action.

Pennsylvania growers seemed to fully realize what various developments in the fruit industry meant and what effect they might have on growers. For instance, the Federal Regional Laboratory at Philadelphia was discussed and it was pointed out that it might draw funds away from Federal supported state laboratories like those at Arendtsville, Pa., and Geneva, N. Y. Growers decided that they must watch to see that the smaller laboratories aren't strangled.

That Pennsylvania growers are trying to help themselves was brought out in the report by R. J. Gillan, chairman of the committee to standardize boxes in the State. He said he sent out questionnaires to growers and received 90 replies. He reported that the one and one-fifth bushel box has practically disappeared.

The group in attendance approved of two containers, one the standard bushel for the wrap and count pack and the bushel and one-eighth for the face and fill pack.

C. F. Gillan said that growers must grow
(Continued on page 27)

CAUGHT BY THE CAMERA AT OHIO MEETING

(From top to bottom)

Former president, Dr. J. H. Gourley, shakes hands with his successor, W. W. Ellenwood, as Secretary Frank H. Beach looks on.

Discussing serious matters were C. M. McCown (left), Proctorville, and H. W. Lutz, Carroll, while they waited for the meeting to start.

Dr. M. A. Blake (center), New Jersey Experiment Station, chats with Dr. W. A. Taylor (left), Columbus, and Hiram Burkholder, Clyde.

Officials of the Ohio Apple Institute confer. C. E. Dutton (left), Milford Center, president, talks to E. L. Austin, Columbus, manager.

Champion clean apple grower Charles Yingling, Oak Harbor, drinks as Carl Bittner, county agent, and S. N. Liann, Port Clinton, wait.

AMERICAN FRUIT GROWER



APS

A PAGE CONDUCTED IN THE
INTERESTS OF THE AMERICAN
POMOLOGICAL SOCIETY

CONVENTION NOTES

MORE than 500 people attended the sessions of the joint meeting of the American Pomological Society and the Ontario Fruit Growers' Association held at Hamilton, Ontario.

High lights of the program were numerous. F. A. Motz, agricultural commissioner, Division Foreign Agricultural Relations, U.S.D.A., Washington, D.C., presented a summary of world production of fruits and vegetables. During the past 20 years Motz declared that there had been great increases in the growing of fruits and vegetables in practically all parts of the world and that fruit growers everywhere now have to face serious problems in marketing.

The problems of growers in Canada and the United States are no more serious than in other parts of the world. The real problem nearly everywhere is that as plantings have increased surpluses have been produced which have led to serious declines in prices. No single country has a monopoly on problems. Motz stated, however, that it was his belief, so far as the United States and Canada were concerned, that there were enough brains in the industry to finally arrive at satisfactory solutions.

Mr. Motz showed an extremely interesting set of moving pictures in color which he had taken on a recent trip to South America. Fruit growing in Argentina and Chili is a new industry and has expanded rapidly. These countries, up to the present, are producing fruit for the ostensible purpose of bidding for the export market. Costs of production are ridiculously low which might enable South American fruit to compete with disastrous effect on American markets.

President B. S. Pickett was honored by being selected as the chief speaker at the "International Banquet" held on January 16. His message was that even though horticultural industries are now faced with seemingly almost insurmountable problems due to rapid developments in modern life over

which individual growers have little or no control, yet he presented it as his firm conviction that by united effort of representatives of the industry in Canada and the United States these problems of supply and distribution



ELECTED PRESIDENT

AT the 56th convention held at Hamilton, Ontario, January 15-17, Prof. T. J. Talbert was elected president of the American Pomological Society. Prof. Talbert is head of the Department of Horticulture, University of Missouri, Columbia. He has been actively associated with the APS for a number of years, having served with distinction on the Spray Residue Research Committee. He is also a contributing editor of *AMERICAN FRUIT GROWER*. Prof. Talbert has a fine background of experience and brings to the APS a splendid enthusiasm for the work of this organization. In accepting the office of president, Prof. Talbert paid high tribute to the leadership of outgoing President B. S. Pickett and stated that if the society were to succeed as it has in the past, it will need the steady backing of every committee and member to carry on the work of the society.

AMERICAN FRUIT GROWER

could be and would be worked out.

Dr. J. H. Gourley, head, Department of Horticulture, Ohio State University, Columbus, discussed, "Soil Treatment Experiments with Orchard Fruits." "What one must do depends entirely upon soil requirements of an orchard," said Dr. Gourley. "In some cases complete fertilizers have produced trees which were markedly resistant to many tree troubles. Mulches in the orchard have been a means of holding the soil, of building up the soluble nitrogen, potassium and phosphorous content and have induced excellent tree growth and high yields."

"Hardy understocks are making marked progress as a real factor in the development of many new orchards in the United States," stated Prof. T. J. Maney, head, Pomology Subsection, Iowa Agricultural Experiment Station, Ames. Extensive experiments show that trees top-worked on hardy understocks, such as Virginia Crab and Hibernial, come into bearing earlier and have a marked resistance to common forms of winter injury that hit the trunks and crotches of trees grown on their own stems.

"Drink Your Apple a Day the Apple Juice Way" is a slogan which one restaurant owner in Canada has adopted. Dr. W. C. Hopper, Division of Marketing, Dominion Department of Agriculture, Ottawa, is enthusiastic about the future of apple juice. From small beginnings a few years ago the consumption of apple juice promises to reach 3,000,000 gallons in the province of Ontario this year.

Peach growing in the Niagara peninsula of Ontario is an important industry. Dr. M. J. Dorsey, head, Department of Horticulture, University of Illinois, Urbana, spoke on "Improving the Market Quality of Peaches on the Trees." Dr. Dorsey's studies show that an Elberta tree produces from 6000 to 10,000 flowers and usually 2000 to 3000 fruits set. Thinning experiments in Illinois have shown that not more than 1200 fruits should be allowed to remain on the tree, if the grower wishes to produce peaches of the right size. Dr. Dorsey deplores the ever-present tendency to pick peaches which are too green. If peaches are given an extra week on the tree, the gain in size amounts to 100 to 125 bushels per acre and the gain in quality is remarkable.

Copies of the Proceedings of the Hamilton meeting will be mailed to paid-up members of the APS. Members will also receive a year's subscription to *AMERICAN FRUIT GROWER*. Annual dues are \$1.25 per year. Make your remittance to American Pomological Society, and send it to H. L. Lantz, Secretary, American Pomological Society, Station A, Ames, Iowa.

H. L. Lantz
SECRETARY

MARCH, 1941

MICHIGAN APPLE TAX ADVERTISING LAW UPHELD

By C. C. TAYLOR, Chairman
Michigan State Apple Commission

IN a decision handed down February 7, the Michigan Supreme Court upheld the Michigan apple tax advertising law in all particulars.

Briefly, the Supreme Court ruled that the legislature had the right to pass the act; that the tax is a specific levy on putting Michigan apples in the marts of commerce; that the tax is for a public purpose through "stimulation of the use of Michigan apples with a consequent increase in production and distribution"; and that the punitive provision of the act was "not designed for the purpose of subjecting one to a prosecution for neglect or inability to pay the specific tax but rather is for the purpose of subjecting one to prosecution who by means of fraudulent or unlawful acts evades or aids in the evasion of compliance with the provisions of the act."

The Supreme Court overruled the decisions of two lower courts who declared the act to be unconstitutional in the fall of 1939 shortly after the law became effective in July of that year.

Thus, the high court of the State sustained the right of Michigan apple growers to endeavor to protect their own business from further loss to competitive fruit from within this country and from foreign sources. It is believed that the decision may be far reaching, for apple growers in other states may now be encouraged to put themselves upon a better financial basis for effective advertising of their apples. Working together in their respective states, apple growers can now bid for their just share of the consumer's food dollar and can compete with other winter fruits on an equal basis.

Since the present marketing season is drawing to a close the Michigan State Apple Commission has decided to utilize the next few months for holding meetings with growers throughout the State for discussion on mutual problems of administration, including revision and refinement of the use of stamps on packages, etc. It is believed that some more simple method can be devised than was originally used. Many Michigan growers who approved the tax plan found it a nuisance to attach stamps to packages. No collection of the tax will be made on the unshipped portion of the 1940 crop. Preparations will be made for resuming collections and advertising on the 1941 crop from the commission's new office, which, when opened, will be located in Lansing, the capital.

It is contemplated that when advertising starts on this year's crop, it will be based, as before, on a campaign in the newspapers of the State and immediate trading area; dealer helps such as posters, signs and cards; publicity on the health value of apples; and State radio. While Michigan apples will be stressed, the effort will be to help sell apples generally, for the problem is a national one.

Watch for
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Issue

MARCH, 1941



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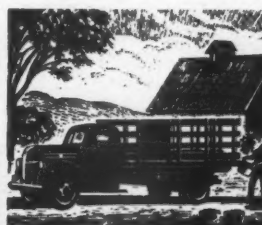
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AMERICAN FRUIT GROWER

PAGE 17

SOME FRANK FACTS ABOUT



APPLE SCAB CONTROL

EVEN in the matter of spraying, there is such a thing as making a mountain out of a molehill. Therefore to a great many people the control of apple scab on fruit and foliage has come to be considered an exceedingly difficult problem, although actually it is not, providing one takes advantage of certain obvious facts gleaned from years of experience in spraying against the scab fungus.

On the one hand, we know that liquid lime-sulfur is an effective preventive of scab; on the other hand, we also are aware that it has limitations, that it will "burn" and "dwarf" the foliage and russet the fruit of certain varieties of apples, especially when it is used in combination with arsenate of lead.

Because of these obvious limitations of liquid lime-sulfur one hears a great deal about wettable sulfurs, in both paste and dry form, when spraying programs are under discussion. In fact, wettable sulfurs are often loudly recommended as straight substitutes for liquid lime-sulfur in all applications of spray for the control of apple scab. When we hear such recommendations, however, we can't help recalling what happened last year. A great many growers in the eastern apple growing areas were told that paste and dry sulfurs would control scab as effectively as lime-sulfur. They put their trust in this advice and sprayed accordingly, but unfortunately climatic conditions were unusually favorable for scab develop-

ment, and—well, they just didn't control scab.

As we all know, experience is a good teacher, and experience over many years has shown definitely that the most satisfactory way to control apple scab is to apply lime-sulfur in the pre-bloom applications. Depending upon the section of the country in which an orchard is located such a spray schedule might well include the delayed dormant, pre-pink and pink applications. In any case, however, the thing to bear in mind is that the pre-bloom sprays are the ones necessary to prevent primary infection of scab.

Since we know that liquid lime-sulfur when used in such applications has caused "dwarfing" of apple foliage, especially if the nights are cold, and since we also know—from long experience—that Dry Lime-Sulfur is equally as effective as liquid lime-sulfur, yet doesn't cause "dwarfing," therefore it seems just good common sense for the Sherwin-Williams Company to recommend the use of Dry Lime-Sulfur for the control of apple scab.

As a matter of record, the Sherwin-Williams Company has the distinction

of having produced the first Dry Lime-Sulfur and it has been consistently recommending it for many years as being more desirable, effective and safe than liquid lime-sulfur as a pre-bloom spray for apples. S-W Dry Lime-Sulfur isn't just ordinary liquid lime-sulfur dried but is a high grade 32-33° Baume double-filtered liquid lime-sulfur to which a stabilizing agent has been added which reduces the danger of injury to fruit and foliage.

It cannot be emphasized too much that if the primary infection of apple scab is to be prevented the pre-bloom sprays must largely be depended upon to accomplish this, although sometimes during a long blooming period it is advantageous to spray in full bloom with lime-sulfur alone, without the use of any arsenate of lead. Some growers do this because they recognize the fact that scab fungus may develop any time between delayed dormant stage and full bloom.

In the matter of wettable sulfurs for the control of scab, we believe that a grower would be better off to use a good grade of dry wettable sulfur beginning with the calyx spray and as a matter of precaution (particularly if the weather from the pink stage throughout the bloom has been cool and wet) to add a little S-W Dry Lime-Sulfur to the mixture because that combination is very adhesive and the active compounds of Dry Lime-Sulfur in combination with a wettable sulfur such as S-W Mulsoid or Sulfix Sulfur make a very effective fungicide.

Since it is necessary to use arsenate of lead in the calyx application, we would suggest that for every three pounds of arsenate of lead used that growers add one pound of S-W Safe-N-Lead—the new zinc compound offered by Sherwin-Williams for the prevention of arsenical injury which is apt to be very pronounced when arsenate of lead is added to lime-sulfur.

Any orchard that has been sprayed according to these suggestions should at the termination of the calyx application be practically free from apple scab infection on either fruit or foliage.

Additional applications of lime-sulfur combined with wettable sulfurs should be unnecessary unless the season is unusually wet and abnormally favorable to scab infection. It is absolutely necessary if you expect to prevent apple scab on foliage and fruit to keep the foliage protected with an active fungicide like S-W Dry Lime-Sulfur from the pre-pink and into the calyx period. If you do this you will control scab and avoid injury to the foliage and russetting of the fruit.

We invite you to write us about your spraying program and problems. We are in a position to give you the most up-to-date, complete and practical advice, and this we will gladly do at any time, and promptly, too!

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AMERICAN FRUIT GROWER

COVER CROPS

(Continued from page 7)

crops. I had the same experience in the earlier days of our New Hampshire experiments. But the time came when the plot receiving clean tillage without cover crops made a poor showing as compared with the ones which had them. Time is an important factor and one must not expect immediate results on all soils. Perhaps there are some places where no improvement in the trees would be noted for a long time. However, the Ohio station reports some results with corn where, after three years, there have been consistent increases in yield where rye grass plus nitrogen has been used as a cover crop in a continuous culture.

But the fact that practically the entire orchard industry of America has abandoned clean tillage is a serious indictment of it. Whether it is Hood River, Wenatchee, or New York State, the story is the same.

The very loss of surface soil by erosion or by wind action is enough in itself to teach the orchardist to keep the land protected most of the time. Also, the holding on the land of leaves in autumn and snows in winter are factors of importance. The adding of large quantities of organic matter to improve the soil condition or even maintain its original tilth is of prime importance in many sections. To do this it is often desirable to lime the land between the tree rows at least every two or three years, and often it is desirable to apply from 100 to 200 pounds of a complete fertilizer such as a 4-10-4, or a 10-6-4 on a sandy soil. Important quantities of mineral nutrients are also returned to the soil when these crops are turned in. Albrecht says, "We are forced to emphasize organic matter not only as source of nitrogen, but also of mineral nutrients because the mineral soil part is not contributing them."

So we see that there is definite evidence that cover cropping should go hand in hand with tillage.

An understanding of both the role organic matter plays and its ultimate fate in the soil involves a knowledge of much organic chemistry and bacteriology. But some assiduous and active investigators have devoted much of their time and thought to these problems and certain principles are quite intelligible to those not particularly trained in those sciences.

In the first place, the terms organic matter and humus are not synonymous. In this connection, the first refers to the raw plant or animal materials which may be incorporated with the soil and also to them in their various stages of decomposition.

(Continued on page 20)

MARCH, 1941

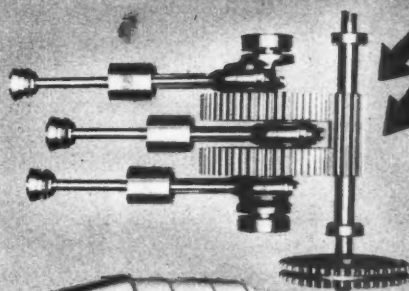
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39C1

AMERICAN FRUIT GROWER

PAGE 19

THE CASE FOR COVER CROPS

(Continued from page 19)

Humus, on the other hand, has been defined by Waksman as "that part of the soil organic matter which gives to it its dark color and which is more or less resistant to decomposition. It is the result of the accumulation of substances of plant origin—on the one hand, largely lignins, and to some extent the fats and waxes and perhaps certain nitrogenous substances, and, on the other, substances synthesized by microorganisms, nitrogenous in nature." That is to say, when cover crops are turned into the land decay sets in and the sugars, starches, celluloses, and proteins which they contain are rapidly decomposed and the lignins remain for a much longer time because it is this more woody material that resists decay.

Hence we see that organic matter does not remain in the soil as such, but decays and part of it leaves the soil as gases, some leaches away to lower levels or in drainage water, and a small part remains as humus. The more active and frequent the cultivation, the more rapidly is it oxidized and lost. Hence in this system of culture large crops should be turned under if the organic matter is not going to be less in the end than when tillage was started. This fundamental concept is important and will do much to clear our minds of the older idea that we could fill the soil with organic matter while the orchard was young and that it would then remain as a bank account on which the trees could draw in their old age.

Furthermore, it should be recognized that there is an important difference in the nature of the cover crops used, particularly between legumes and non-legumes. Dr. F. J. Salter conducted an experiment which throws light on the role and fate of various crops turned into the soil and the few figures given below are worth examination.

Here we see that a narrow ratio crop (C:N) like the legumes and also ragweed yield much more humus and produce a much higher amount of nitrates than such non-legumes as corn stover or wheat straw. But if nitrogen fertilizer is added to the latter when plowed in,

then the situation is not so serious.

But what cover crops should we grow and when should they be plowed under? Probably there is no one answer to these questions, but with the growing realization that orchard soils have often lost their "character," tend to puddle, bake, and are impervious to air, there is a corresponding interest in such questions. Certainly, the best crop or crops to use will depend upon location, character of soil, and purpose for which they are grown. They may, for convenience, be divided into summer and winter crops, at least in the North. The orchardist should consult his experiment station for advice for his particular location and what liming and fertilizer program should be followed to secure the best growth of these crops.

Summer Crops

If the soil is fertile and reasonably well drained, there are a number of crops that could be grown. Probably the most common one is soybeans, although cowpeas, buckwheat, lespedeza, millet, and Sudan grass are commonly used either alone or in mixtures. In the South, crotalaria and sesbania are also used extensively.

Soybeans are of coarse growth and hence are useful in improving the physical condition of the soil. While they are more tolerant of acid soil than red clover, they do not thrive on strongly acid lands. When seeded at the rate of one and one-half to two bushels per acre during the forepart of June, they should give a good crop. Since the bacteria which work on this crop are not the same as for other legumes, it requires special inoculation when first sown on land. Soil from a field where they had previously been grown is satisfactory for this purpose.

Korean lespedeza is more of a permanent than a cover crop, although it is an annual. In the North it makes a rather short growth, although it reseeds quite satisfactorily, but south of the latitude of Cincinnati it is excellent.

Where a large amount of herbage is desired, either millet alone or with soybeans as a mixture, or Sudan

(Continued on page 31)

Effect of Various Crops on Nitrogen Content of Soil

7000 pounds added to soil	Carbon- nitrogen ratio	Humus left after a year. Pounds	Nitrogen added. Pounds	Pounds nitrate nitrogen per acre after:		
				1 month	6 months	12 months
Corn stover.....	47.8:1	1186	80	-60	-60	+20
Wheat straw.....	41.3:1	1737	97	-40	-60	-20
Red clover.....	26.0:1	3147	195	-30	+40	+140
Bluegrass.....	20.5:1	3044	185	-40	+40	+160
Sweet clover top.....	12.0:1	3474	330	+20	+140	+220
Ragweed.....	12.0:1	4076	340	+40	+220	+220



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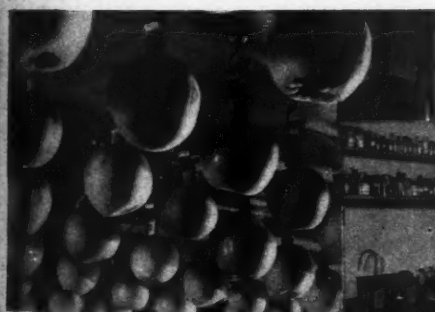
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Sprayed apples exposed to codling moth attack in the "controlled climate" room.

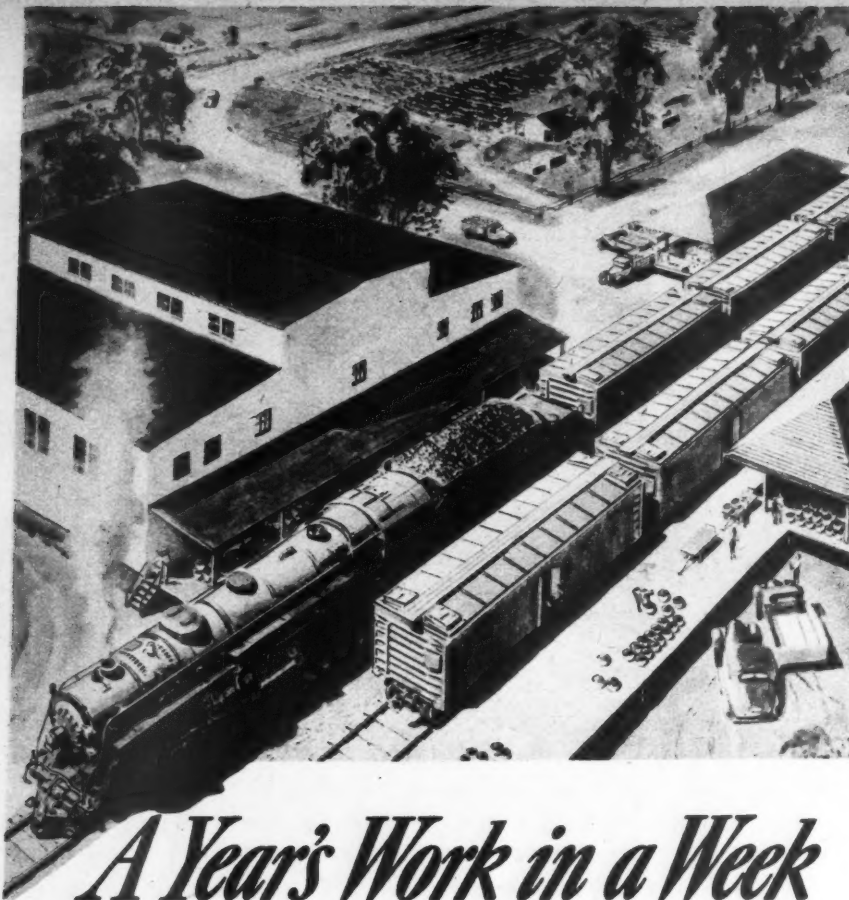


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*GRASSELLI Lead Arsenate
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Lime Sulfur
Calcium Arsenate
*DUTOX Fluorine Insecticide
Copper-A Compound
*GRASSELLI Spreader-Sticker
*LORO Contact Insecticide
Flotation Sulfur Paste
Bordeaux Mixture

Spray Oils
*PARAPONT Paradichlorobenzene
Zinc Sulfate—Flake and Crystal
*PARMONE Hormone Spray
*BLACK LEAF "40"
*BLACK LEAF "155"
Cryolite (precipitated)
Copper Sulfate
*FLUXIT Spreader
Sulfur
Paris Green *Trade Mark



A Year's Work in a Week

FOR months they loaf in the sun—empty packing sheds beside seldom-used tracks. You wonder why they were built there among the fields or groves.

Then one day you feel life begin to stir. For miles around, long strings of refrigerator cars congregate on every siding. A regiment of pickers, graders, packers gathers from nowhere. Mountains of crates and baskets appear overnight. For in the fields another crop is ripe, and for a few brief days that obscure crossroads may be a major source of a mighty nation's supply of some particular fruit or vegetable.

Elsewhere endless fields of grain flood waiting trains with sudden Niagaras of golden harvest.

No other method of transportation could possibly provide for

the swift, orderly marketing of America's crops. To take care of these seasonal shipments, the railroads maintain thousands of miles of track, special types of freight cars and endless other facilities that are used primarily for peak crop movements. Operating at all seasons over their own vast network of steel highways, the railroads link producer to consumer with a fast, dependable, low-cost, low-loss system of distribution.

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NOW TRAVEL ON CREDIT

America's railroads offer new, simple installment payment plan for trips and tours.

SEE YOUR LOCAL TICKET AGENT

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A national campaign each APRIL to promote good packing, secure loading and careful handling of ALL shipments—sponsored by Shippers Advisory Boards. Avoid loss and damage. We can't afford to waste our national resources.

**ASSOCIATION OF AMERICAN RAILROADS
WASHINGTON, D. C.**

STRAWBERRY VARIETIES

(Continued from page 11)

Oregon and Washington, where because of its high flavor, large size, productiveness, and adaptation to freezing it is the chief variety. In central California near the coast it has been replaced to a considerable extent by the Nick Ohmer which is much more resistant to the "yellows" virus disease.

Howard 17 (Premier) is still an important variety in the northeastern states. Its productiveness, healthy plant, and frost resistance make it still an outstanding and leading variety. It is less important than formerly because some of its daughters have replaced it in certain sections. Thus Blakemore, a better shipper, has replaced it on the Chesapeake Peninsula. Dorsett, with higher flavor, and Catskill, of later season, have also replaced it to a considerable extent.

Missionary continues as the only important variety in Florida. It has been partly replaced by Blakemore in other places where Missionary is decreasing in commercial importance. Klonmore should be tested by Florida growers as a variety possibly to replace Missionary.

Catskill, though relatively new, is an important commercial variety in the northern states. It has been about as frost resistant and productive as Howard 17 (Premier), but is later, slightly firmer, and slightly better in quality. It is a dependable midseason variety and should be grown more extensively in the areas to which it is adapted.

Dorsett is an important variety in Maryland, Delaware, Virginia, and in the states westward to Missouri. Its very high flavor, large size, attractiveness, and fine plants make it a favorite for the high class market. It is not so firm as Fairfax and does not regularly possess its high flavor in sections as far south as eastern North Carolina. In states as far north as New York and New England it is too frost-susceptible to be the leading variety.

Dunlap is still the leading hardy variety in the more northern sections, though Howard 17 (Premier), Beaver, and Catskill have replaced it in some sections.

Fairfax continues to increase in acreage. Its high dessert quality, good size, firmness, and attractiveness have made it outstanding for the highest class market. When well mulched to shift the crop to the late season, it has escaped frosts and produced well as far north as southern Michigan, central New York, and southern New Hampshire.

NEW VARIETIES

Several outstanding new varieties are now available for trial that are likely to change the relative importance of standard varieties and replace them in some areas. Some of the most important are Klonmore, Fairmore, Tennessee Supreme, Redstar, and Dresden. But still other new ones may prove profitable to many growers—Massey, Eleanor Roosevelt, Maytime, Starbright, Northstar, Shelton, Hebron, Pathfinder, and three Texas varieties—Alamo, Ranger, and Rio Grande.

Klonmore is a Klondike-Blakemore cross from the Louisiana Agricultural Experiment Station that is handsomer, earlier, and finer in quality than the old Klondike. Its foliage is so disease resistant that spraying has not been necessary. As stated above, it should also be tested in Florida. Already in the first year after it was named some thousands of acres have been set to the variety in Louisiana. Farther north than Louisiana the fruit may be too small to be desirable.

Fairmore is a Fairfax-Blakemore cross from the U.S.D.A. and North Carolina breeding work that is productive, high-flavored, very firm, with the Fairfax color, and disease resistant. It should be tested as an early fancy shipping berry for southern states. It is the firmest of all strawberries. However, it is not quite so early as Blakemore and is darker in color.

Massey, also from the U.S.D.A. and North Carolina breeding work, is a high-flavored, firm, late shipping berry, of Blakemore color and adapted to southern regions. It keeps its high flavor when shipped to market but is too late in season for the major commercial variety in the South. However, ripening toward the end of the Blakemore season, its large size makes it promising to grow with that variety.

Tennessee Supreme, from the Tennessee Agricultural Experiment Station, has the same parentage as Blakemore. It has been very productive and is quite promising in frozen-pack tests. The flavor is considered very good and it is as early as Blakemore in Tennessee. Though possibly too soft to replace Blakemore as a shipping variety, it should be tested in Tennessee and surrounding region.

Redstar and **Starbright**, from the U.S.D.A., are both high-flavored, firm, handsome Chesapeake-Fairfax crosses. Both have disease resistant foliage. Redstar is extremely late, later than Gandy, Aroma, or Late Stevens and should be used to extend the season of strawberries in northern states. Starbright is about the same in season as Chesapeake but is firmer, higher flavored, and handsomer. It produces more plants, especially on the more elevated sites than does Chesapeake.

Dresden, from the New York Agricultural Experiment Station, is a variety of the Catskill season and like the Catskill is extremely productive. It does not seem to succeed so well as Catskill in Maryland but does well in New England, in central and northern New York, and in similar sections. It is too soft for a long distance shipping variety.

Of the other new varieties **Eleanor Roosevelt**, from the U.S.D.A. and North Carolina co-operative work, showed up very well in 1940, being large, very productive, and attractive in eastern North Carolina. It is not so early as Blakemore, nor as vigorous as Fairmore, but under high culture may be profitable. It has not succeeded so far north as Maryland. **Maytime**, from the U.S.D.A., is an extremely early variety for Maryland and similar regions, ripening about as early there as the old Excelsior, but is large, firm, and high-flavored while Excelsior is small, soft, and very acid. It is suggested for the earliest locations. In New York in 1940, however, it was no earlier than Howard 17 (Premier). **Shelton** and **Hebron** are both from the Connecticut Agricultural Experiment Station; Shelton an early, productive sort to be compared with Howard 17 (Premier), and Hebron a late variety to be tested in Connecticut, but which is probably too soft except for nearby markets. **Pathfinder**, from the New Jersey Agricultural Experiment Station, is a showy, productive variety which is resistant to red stele root disease. It should be tested on low sites in the north where air drainage is good and where there is danger from this trouble. Like Howard 17 (Premier) it is too soft in Maryland for a good shipping variety. **Northstar**, from the U.S.D.A., is very vigorous but makes few plants. The berries are large, handsome, firm, and of very high quality. It is adapted to fertile moist soils as far south as Virginia and Oklahoma.

In southwest Texas **Ranger**, **Alamo** and

(Continued on page 34)



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AMERICAN FRUIT GROWER

ARMISTICE DAY FREEZE

(Continued from page 12)

MISSOURI

trunks is of a dark brown color down to the wood without green streaks the injury is likely to be serious. This will be particularly so if the damage extends all the way around the trunk. In fact, the trees may be girdled, which would permit them, due to a storage of foods in the twigs and branches, to put out leaves and even blossoms next spring, after which they may wither and die.

Since no one can accurately predict the extent of the damage, it is suggested that growers generally postpone the cutting or pulling of fruit plants until after growth starts. Even then it may be well to withhold drastic operations, such as cutting or destroying, until one is very sure the trees are dead. It would be better to lose one season of growth on young trees than to destroy trees that might possibly recover.

In some instances, especially with young trees of the various species, the grower may employ "cutting-back" as a remedial measure. This would consist of cutting the trees just below the injured area and above the graft or bud union. Where there is sufficient space or distance between the injured area and the graft union for one or more sprouts to arise, cutting-back may prove satisfactory. Sprouts arising from below the graft union can of course be budded or grafted at later dates. The cutting-back work should be done not later than May 1 and if it can be accomplished during the last half of March or the early part of April, better sprout growth for the perpetuation of the trees is likely to occur.

Pruning work should be light in nature because the injured trees will need as much leaf surface as possible for the manufacture of food materials in an effort to overcome the injury. Cultivation or fertilization, and proper spraying should be helpful in securing a rapid growth in the spring and early summer.

KANSAS

killed. A condition somewhat unusual for this region is that peach fruit buds apparently are uninjured in some instances, whereas the bark on the older wood and particularly on the trunks of the trees seems to be severely injured or perhaps killed. On the sour cherry a discolored area is present under many of the buds.

The damage on peach and cherry trees which were set out in the spring of 1940 seems to be less than with older trees.

Among the apple varieties it appears that York and Stayman have been injured more severely than many other varieties. Comparatively little damage is observed either with the fruit buds or trees among the Wealthy and Yellow Transparent plantings. Important commercial varieties, such as Jonathan, Winesap, Grimes, and Delicious, are injured in varying degrees and it is still too soon to determine how much damage has been caused. Apparently the most severe damage has occurred in apple orchards between five and 15 years of age.

Orchardists are being advised to do no pruning this winter and many growers will make an attempt to provide favorable growing conditions for the trees which suffered least in the storm.

Raspberry and blackberry plantings were damaged and in most instances the lateral buds on the fruiting canes were damaged, although the fruiting canes themselves were not killed. Most vineyards, principally of Concord, have showed but little evidence of any damage.

Many strawberry plants, especially those in the northeastern part of the State,

show some discoloration in the crowns, and it is still too early to predict how much this injury will reduce fruit production and runner set next summer.

NEBRASKA

Wealthy were not seriously damaged. Enough live fruit buds to produce a good crop are still left. Duchess fruit buds were more seriously hurt. Older bearing trees of varieties like Jonathan, Golden Delicious, Red Delicious, King David, and York were injured in the trunk, crotches, large branches and even in the three and four-year-old wood, but not serious enough to result in a high proportion of dead trees. The most serious damage here is to the fruit buds and spurs and very few apples are expected. Gano and Ben Davis trees seemed to stand the shock a little better and there may be a fair crop of these. Missouri Pippin, Winesap, Grimes, Black Twig, Virginia Beauty, and Stayman are more seriously injured than any of the previously mentioned late varieties. Here the loss of trees probably will be the heaviest. The most serious damage to apples seems to be on trees from five to 10 years of age of the varieties mentioned above other than the summer varieties. Haralson, Secor, Joan, and Northwestern Greening are only slightly damaged even in this age group.

Cherries: The two most common varieties of sour cherries are Early Richmond and Montmorency, both of which are seriously damaged in the trunk, crotches, young and old wood, and fruit spurs. The loss of trees will be fairly heavy here. The Morello type is hurt only slightly and should produce some fruit.

Pears: Old pear trees of all kinds are seriously damaged in trunk and main branches. Fruit buds are all gone. The loss of trees will be very heavy.

Peaches: Most young peach trees are killed to the ground. The old trees vary a great deal in different locations. Some show live fruit buds and twigs and slightly injured trunks. Others of same variety show serious trunk and bud injury.

Plums: The American plums are in most cases perfectly sound. The European types like Damson, Green Gage, and Lombard are dead to the ground as are also those with Japanese blood like Abundance, Burbank, and Elephant Heart. Hanska, Kahinta, and others of this type of Dr. Hansen's crosses are hurt badly, but Wauneta is apparently uninjured.

Grapes: Concord is seriously damaged in bud and cane in the northern part of the grape region (Douglas and Washington counties). Moore's Early and Campbell's Early are not seriously hurt. Farther south there is bud damage on low ground on Concord but no serious damage of the canes. At best the grape crop will be less than a third of last year's bumper crop.

Raspberries: There is very serious damage to the fruit buds on Cumberland black raspberries. The crop will be very small on the best patches and a total loss on most of them. Where weeds stopped the drifting snow the buds are alive.

Currants and gooseberries show no injury whatever.

Strawberries: Injury to the plants is spotted but there should be a fair crop.

Nursery stock: Wherever nursery stocks of fruit plants were in the field the loss was so serious no attempt will be made to market them.

IOWA

sometimes a thin, unhealthy, water-soaked region of tissues made up of inner bark and outer sapwood layers; and, as the season has progressed, distinct drying of the affected areas with some shrinkage of the bark and a line of demarcation between injured and uninjured bark. In

(Continued on page 30)

"Only 3 SCABBY BUSHELS IN 10,000 BUSHEL CROP"

... J. R. BRAMAN
GRAND RAPIDS, MICHIGAN!



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The action picture shows Mr. Braman's outfit at work in young orchard. The R2 is powering the 500-gallon, power take-off sprayer with 35 G.P.M. pump (600 pounds pressure)—working steadily up and down steep grades! Inset: Mr. Braman with some of his prize McIntoshes!

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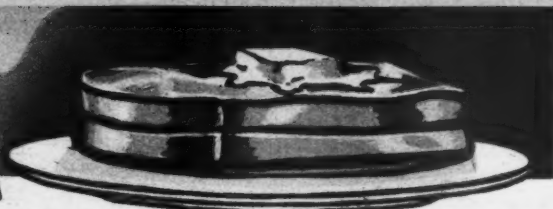
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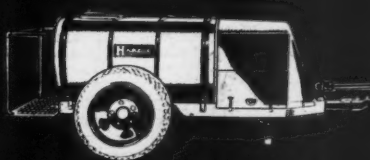
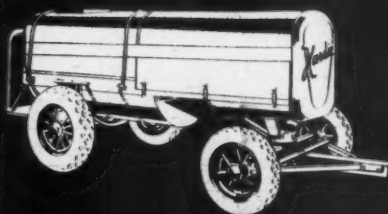


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In a test by a leading University they found an increase of 40% in consumption of water by a laying flock brought a 35% increase in egg production. Running water also increases milk production and makes hogs gain faster.

BURKS WATER SYSTEMS

—make it possible to have running water at low cost. Write for Free Book. Tells about BURKS Super Turbine Shallow Well and BURKS Educator Deep Well Systems—One Moving Part—Largest Capacities—Automatic, Self Priming—Know Burks and You'll Buy Burks.

DECATUR PUMP CO., 79 E. ST., DECATUR, ILL.



PHILIP HANDERSON

HEADS PROMOTION AND ADVERTISING FOR FORD TRACTOR

PHILIP HANDERSON has been named sales promotion and advertising manager of the Ferguson-Sherman Manufacturing Corporation, Dearborn, Mich. The announcement, made by H. Stanley Jenkins, manager of sales, states that Mr. Handerson will take over his new post immediately. In addition to his duties as advertising manager, Mr. Handerson will be active in dealer and distributor contacts with special emphasis being given personal dealer aids and advertising. Ferguson-Sherman is the sole distributing organization for Ford tractor with Ferguson system farm implements.

Mr. Handerson recently concluded nine years as director of advertising and publicity for the B. F. Goodrich Company, Akron, Ohio. Formerly, he was secretary of the Griswold-Eshleman Advertising Company, Cleveland, Ohio, and was research director of the Cleveland office of McCann-Erickson.

CLEAR VISION for SPRAYERS!

plus HEAD and EYE PROTECTION

Just Pull Out and Tear Off

★ Here is the face protector you need—Cesco E-Z "C"! Carries a 30 ft. roll of transparent ribbon that passes across the regular mask. Just pull out a little when it water spots or smudges and ALL'S CLEAR immediately.



Got Greater Crop Coverage—Comfort—Security!

A better crop—faster work with comfort and protection from lime, sulphur, lead, oil and other sprays. You get ALL of that when you order your Cesco E-Z "C"! Face Protector from your local seedsman or dealer, or direct from us. Act today! Price \$3 complete.

CHICAGO EYE SHIELD CO., 2307 Warren Blvd., Chicago, Illinois

STATE NEWS

(Continued from page 15)

better apples if they are to survive. When he said, "We have to grow better stuff," he seemed to echo the sentiments of his audience.

J. Eric Linde, chairman of the legislative committee, exhibited an independent attitude when he said, "I don't like to see us go to the Government, not even to sell apples. We've got to put our own house in order."

Besides reports of growers, the meeting featured talks by such men as Dr. R. D. Anthony, State College, Pa.; Dr. R. S. Marsh, West Virginia University; Dr. T. L. Guyton, Pennsylvania Department of Agriculture; Dr. B. A. Porter, U.S.D.A.; Dr. E. M. Stoddard, Connecticut Agricultural Experiment Station; and Dr. Richard Bradfield, Cornell University.

Officers elected at the meeting were: H. W. Skinner, Chambersburg, president; H. M. Anderson, New Park, vice-president; Paul Thayer, Carlisle, treasurer; and J. U. Ruef, State College, secretary.

TENNESSEE—Growing conditions have been exceptionally favorable throughout fall and winter and fruit prospects for 1941 are excellent. Strawberries suffered but lightly from the early fall freezes and growers report their plants in splendid condition. Peach trees, returning after their vacation last year, are generally well budded and ready for business. Other fruits are equally promising.

Fruit growers are becoming more "fertility conscious" and some growers are looking about for economical means of supplying the elements. Herman Maxey of Knoxville who specializes in high quality grapes, apples, and peaches for the Knoxville curb markets, has built up some 50 acres of orchard land and maintained above average growth status on his trees and vines solely by the use of hog hair top dressing. Week in and week out, loads of hog hair are brought from the local abattoir. In cool weather, this is broadcast over the rows, and is disked in lightly, but in summer it is composted with sawdust to kill its objectionable odor.

Olin Albin of McKenzie noted that one of his apple trees growing near a highway embankment was exceptionally thrifty and discovered that several years previously a telephone service truck had dumped a load of old dry cell batteries there. He bought up a lot of old B batteries from radio shops and burst open four or five of them under each apple tree. When used experimentally on one row of Transparents five years ago, Mr. Albin said these trees had especially rich foliage and the fruit sized up ahead of the rest of the orchard. He believes he is combatting a zinc deficiency, but probably ammonia or other elements give some benefits. The batteries disintegrate in two years' time.—A. N. PRATT, State Horticulturist, Nashville.

NEW HAMPSHIRE—Fruit growers at their State horticultural society meeting at Concord, January 23, voted in favor of a cull apple labeling law for New Hampshire, for a survey of commercial apple trees in the State, and a standard one and one-eighth bushel box for all eastern apples in jumble, loose, or face-and-fill packs.

The growers voted support of a bill to be put before the State legislature which would modify the cull apple law as used in Missouri and other states. The proposed bill specifies that all apples sold in both wholesale and retail trade must be labeled "culls" or "drops" if they are below U. S. utility grade. Good drops will not be included as culls, although not hand picked, unless they have more than 15 per cent bruising or more than 10 per cent waste in preparation. Culls will be labeled with black letters two and one-half inches high. Other grades of apples than culls will not have to be specifically labeled except as otherwise required by law.

The survey of apple trees in the State was approved by the growers, to tie in with the results of similar surveys in all the other New England states.

MARCH, 1941

Be Sure to See It! New Low Price Tractor For the New Future in Fruit



Electric Starter
and Lights Extra

All signs point to a brighter future for fruit men who manage well and *keep their costs down*. That calls for fast, nimble-footed power which takes but little time for daily care, loses no time when work is waiting, makes the most of every man-hour.

Priced in the lowest bracket, this new Case "VO" tractor offers you a low investment cost. Fitted with Fuel-Miser carburetion and four gears forward it brings low operating cost. Being the big tractor of the 1-2 plow class it gives you extra working capacity that gets more acres done in a day and cuts down the labor cost per acre.

Stop in at your Case dealer's and

take a look at the "VO." Notice how the power take-off is properly placed for driving spray rigs. See how the Case full-swinging drawbar makes quick, short turns easy with full load . . . how it locks automatically when backing. Get the feel of its new-type toe-touch assisting brakes. Observe how fully its fruit-guard fenders protect overhanging branches, how its cockpit cowlings protect the operator's comfort.

For larger acreages and heavier work Case has two larger orchard tractors of full 2 and 3-plow size . . . every one more tractor for the money in its size and price class . . . also full line of orchard tools.



Know what's new for the future of fruit. Mark items that interest you, mail to J. I. Case Co., Dept. C-12, Racine, Wis., or nearest branch.

☐ 1-2 Plow ☐ Orchard Tractor Plows
☐ Full 2-Plow ☐ Offset & Tandem Harrows
☐ 3-Plow ☐ Tractors ☐ Spring-Tooth Harrows

Name _____

Address _____

Acres _____

Send for New
Tractor Book

CASE

AMERICAN FRUIT GROWER

PAGE 27

TO GROWERS WHO MIX BORDEAUX

NICHOLS "INSTANT" COPPER SULPHATE is more than the old time copper sulphate which has always been used for Bordeaux. Check these 10 points carefully and see why Nichols original Triangle Brand "Instant" Copper Sulphate really has "something to show for itself."

1. **ACCURATE CONTROL** . . . You know exactly how much copper sulphate is in your mixture.
2. **GREATER SAFETY** . . . Control of mixture means increased safety.
3. **BETTER MIXTURES** . . . Dissolves instantly and completely. Requires no agitation.
4. **ECONOMY** . . . No waste, no sediment, no undissolved crystals. **YOU USE IT ALL!**
5. **EFFICIENCY** . . . 99% pure, 100% efficient. Permits quicker use of fresh solutions.
6. **FASTER OPERATIONS** . . . Saves time, labor . . . mixes directly in the spray tank.
7. **REDUCES EQUIPMENT** . . . Eliminates extra equipment for slaking lime and stock solutions.
8. **KNOWN QUALITY** . . . Standard for 50 years, it is the oldest and best known brand. Modern manufacturing methods assure never failing high quality in every package.
9. **MODERN PACKAGES** . . . Safeguard quality. At no extra cost, you get the best in water-proof bags and steel-hooped barrels.
10. **PRODUCED IN 3 LARGE PLANTS** . . . Your dealer can always supply you because of three strategically located plants.

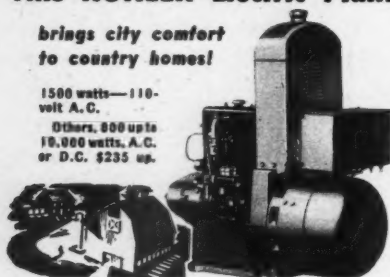
NICHOLS TRIANGLE BRAND
ORIGINAL "INSTANT"

ASK YOUR DEALER for Nichols Triangle Brand "Instant" Copper Sulphate today. He also carries LARGE AND SMALL CRYSTAL and GRANULATED NICHOLS SULPHATE for STANDARD BORDEAUX, and MONO-HYDRATED for copper lime dusts. Write for your copy of the new Bordeaux Booklet.

This KOHLER Electric Plant

brings city comfort
to country homes!

1500 watts—110-
volt A.C.
Others, 800 up to
10,000 watts, A.C.
or D.C. \$235 up.



Wherever you are—farm, camp, lodge, cabin, filling station—you can enjoy the comforts and conveniences of dependable electric current. • Ample capacity for average lighting, pumping, radio, appliances, small tools. Easily installed—fully automatic—self-starting, self-stopping—sturdy, compact, quiet—economical. Investigate—

MAIL COUPON TO KOHLER—TODAY



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ELECTRIC PLANTS

Planned Plumbing and Heating

KOHLER CO., Dept. AFG-3P,

Kohler, Wisconsin . . . Please send me information about Kohler Plants!

Name _____
Address _____

MORE ABOUT THE CARPATHIAN WALNUTS

CONSIDERABLE interest is still being manifested in the Carpathian Persian (English) walnuts which have been imported from Poland during the past 10 or 12 years. Because of the war nuts have not been imported during the past two years, but seedling trees raised from nuts imported previously are still available. The writer is often asked whether there are bearing trees of the Carpathian walnuts in this country. In a paper prepared by P. C. Crath, the introducer of this strain of walnuts, for the meeting of the Northern Nut Growers' Association at Roanoke, Va., reference was made to trees producing nuts.

Thomas Rudy of Belleville, N.J., has two 11-year-old trees, the larger of which is eight inches in diameter and 20 feet tall. This tree bore 100 nuts in 1938 from which Mr. Rudy has raised 80 seedlings. The smaller tree bore 25 nuts in 1939.

Carpathian walnuts on a farm near Washington, N.J., are bearing regularly. Near Thorold South, Ontario, two eight-year-old trees produced 60 walnuts. Mr. Crath states that the Carpathian walnut produces female flowers at five years of age and male catkins two or three years later, at which time the trees begin fruiting.

At the same meeting Carl Weschcke of St. Paul, Minn., reported on walnuts collected for him by Mr. Crath in the Carpathian Mountains in 1936 and 1937 and on an importation of walnuts from Austria. The 12,000 seedlings raised from these walnuts experienced temperatures of 30 degrees or more below zero. Many winterkill to some extent, but even the most tender gain in height each year, and all are apparently becoming acclimatized. The hardier of these seedlings will be brought to fruiting age by Mr. Weschcke.

On the same expedition Mr. Crath collected scions of the best European varieties, three of which produced nuts for Mr. Weschcke in 1940. These trees vegetate two or three weeks earlier than the earliest black walnuts.

Mr. Weschcke finds that these varieties are much more difficult to propagate than known varieties of black walnut or black walnut stocks. When grafted experimentally on eastern black walnut, native Minnesota black walnut, heartnut and butternut rootstocks, the greatest number of successful grafts was obtained on the butternut, but the butternut root system is least satisfactory for the support of the Persian walnut top. Probably seedlings of the Persian walnut itself must be used for best results.—GEORGE L. SLATE, Sec'y, Northern Nut Growers' Assn., Geneva, N.Y.

\$45 FROM three HIVES of BEES



This and many more yearly records in free booklet. In cities you can produce honey in back yards. Easy to start, bees require little attention once a week. Young people and women, as well as men, keep bees. Our magazine, "Gleanings in Bee Culture", gives monthly instructions. By selling in your local market you make a good profit. Bees fly over two miles for nectar. They are necessary for the pollination of fruit.

FREE CATALOG

Write for free catalog with over 4000 words of instruction, and booklet on beekeeping profits written by thirty beekeepers. Beginner's outfit ready to assemble, complete with bees, \$11.50. Six months' trial subscription to "Gleanings in Bee Culture", 64-page monthly magazine for only 25c (to new readers only). Check below.

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322 West Liberty St. MEDINA, OHIO

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AMERICAN FRUIT GROWER



What a
DIFFERENCE
When You Use

TREE TANGLEFOOT

STOPS ALL
CLIMBING INSECTS

Destructive canker worms, cutworms, gypsy-moth and tussock-moth caterpillars, bag or basket worms, and similar pests can't get into your trees or vines when you use economical, easily applied TREE TANGLEFOOT bands.

EFFECTIVE FOR MONTHS

Single application lasts upwards of three months, regardless of weather. Won't soften, run or melt, yet always elastic, expanding with growth of tree.

SAFE AND DEPENDABLE

Contains no injurious ingredients. Can be used safely on vines and young trees as well as mature trees. 30 years continuous use prove its dependability. Use it to protect shade trees, too. For this purpose many prefer the indirect balsam wool banding method. Unexcelled for tree surgery. Requires no mixing, and is easily applied with wooden paddle. Insist on TREE TANGLEFOOT.

Send for TREE TANGLEFOOT Literature
THE TANGLEFOOT CO. • GRAND RAPIDS, MICH.
Quality Insecticides over 50 Years

FREE This New Book with Fresh Ideas for USERS OF SPRAYERS



If you have use for any type of Spraying Equipment, it will pay you to examine our 1941 Catalog, packed with fresh ideas that can mean big cash savings and better crops. You'll find in it every type of Power and Take-Off Sprayer for Orchard and Field Crops. (Our new "Economy" line starts at \$220.) You'll be interested in the sensational new FIELD FORCE Hitch which permits right angle turns on headlands. Write today for your copy of this helpful Catalog.

FIELD FORCE MFG. CO.

Makers of Sprayers for 50 Years

Dept. A. Pottstown, Pa.

?? SPRAY HOSE BURSTING ??

GUARANTEED HIGH-PRESSURE HOSE
ANY LENGTH—ANY PRESSURE TO 1,000 POUNDS

3/8" x 3 BRAND 2 1/2 ft. 1/2" x 3 BRAND 3 1/2 ft.

7/16" x 3 BRAND 2 1/2 ft. 3/4" x 3 BRAND 4 1/2 ft.

3/8" x 3/16" x 1/2" High Pressure Couplings @ \$1.25 Pk.

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SAMPLE
FREE

BROADWAY RUBBER MFG. CO.

Manufacturers and Engineers Since 1888

537 E. BROADWAY LOUISVILLE, KENTUCKY

MARCH, 1941



Convenience in carrying is one of the reasons why customers are showing preference for fruit packed in open-mesh consumer-type bags.

OPEN-MESH BAGS SELL FRUIT ON EYE APPEAL

REPORTS from the apple growing regions of the country—particularly from the four-state area of Virginia, West Virginia, Pennsylvania, and Maryland—show that open-mesh bags are gaining in favor among growers and grocery men.

Use of mesh bags this year is substantially ahead of last year, according to Carroll R. Miller, secretary-manager of Appalachian Apple Service, Inc., who keeps close check on the type of package in which the consumer buys his apples.

The mesh bag is admirably suited for export apples from the Appalachian area because export apples are of small $2\frac{1}{4}$ to $2\frac{1}{2}$ -inch size, which pack well in mesh bags as they give a more even weight than large apples do.

Grocers like the consumer-type mesh bags because they save labor of handling, weighing, and wrapping apples.

Growers who sell part of their crop at roadside markets are also finding the mesh bags of value. Those who use them say customers like to buy them because they can see the apples in the bag and because the bags are easy to carry.

Coming
**JUNE DIRECTORY
ISSUE**

MARCH, 1941

WHY WE TALK ABOUT A SYSTEM INSTEAD OF A MACHINE



GETS ALL YOUR WORK DONE ON TIME

AMERICAN FRUIT GROWER

PAGE 29

EYES BUY!



... Apples in Bemis LENONET Open-Mesh Bags

You, as a grower, packer or shipper, take an important step toward winning consumer favor when you pack your apples in Bemis Lenonet Open-Mesh Bags. For, even the best apples look better in these convenient, consumer-size packages. They sell faster, too! Lenonet has doubled, tripled—even quadrupled retail sales.

Of course your own sales—and profits—are in direct proportion to those of the retailer.

And you benefit in other ways. Lenonet bags are easy to pack, economical to ship. Apples shipped in Lenonet reach the market in better condition.

MAIL COUPON TODAY

for samples and facts on how Lenonet helps packing, shipping and selling.



BEMIS BROS. BAG CO.

426 Poplar St., St. Louis, Mo.

Please send Lenonet samples, prices and information.

Name

Address

Postoffice..... State.....

PAGE 30

ARMISTICE DAY FREEZE

(Continued from page 25)

short, the symptoms are typical of low temperature injury, but the affected areas are larger than the ordinary patch damage which occurs in severe winters, often encircling and including the entire trunk. Fruit buds are brown and dry and the injury generally includes the whole spur. One, two, and three-year wood shows varying degrees of browning, differing with varieties, all the way from the inner bark to the pith. Vegetative wood buds are almost as badly damaged as fruit buds.

The only common variety of apple which escaped any damage in the worst affected areas was Yellow Transparent, with Wealthy and Duchess ranking next in order. The wood of Hibernial, Willow Twig, Haralson, Hawkeye, Erickson and a number of crab apples was also little damaged, but none of these varieties are important factors in the commercial orchards. Grimes, Delicious, Missouri Pippin, Golden Delicious, Stayman Winesap and Jonathan were among the susceptible varieties. Jonathan, however, showed a little less damage to the wood than the other varieties just named. Orchards in the height of their vigor and bearing capacity were the most severely hit. There is much partial damage to trunks of old, thick-barked trees, with general killing on their southwest exposures and more or less live bark on the northeast.

It is impossible to estimate the ultimate extent of the damage at this time. Authorities throughout the affected region differ in their appraisal. Trees do not die all over all at once. However, the commercial crops of apples, pears, cherries, and peaches in the northwestern part of the affected area cannot be important factors in the markets in 1941, because the fruit buds are very generally killed. Moreover, it seems probable that 25 per cent or more of the pomology of the affected area will have to be operated on a salvage and replacement basis.

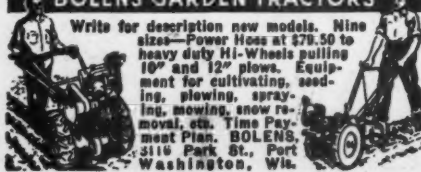


Immediate Openings

for the interesting outdoor profession
of caring for shade trees

Expansion creates future openings for permanent positions and advancement on merit to men who qualify. Selections are now being made. Consideration given only to sturdy, clean-cut Americans, not afraid of strenuous work. Must be single, between 18 and 26 years of age, free to travel, with good practical education. Must have good references and be able to pass a thorough physical examination. Write for qualification blank to serve in place of personal interview. Davey Tree Expert Company, 164 City Bank Building, Kent, Ohio.

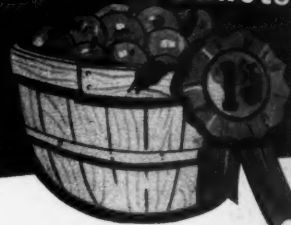
BOLENS GARDEN TRACTORS



AMERICAN FRUIT GROWER

Get Better Yield From Your Crops!

with
Corona
Products



1 ORCHARDISTS!—you will get bigger and better apple crops, healthier fruit if you spray systematically with Corona Dry Arsenate of Lead. This double-action poison means sure death to codling moth, apple worm, bud moth, curculio and other pests.

2 FOR BIGGER POTATO CROPS spray the vines with Corona Calcium Arsenate and Corona Bordeaux Mixture. Use as a wet spray or a dry dust. Scientific workers are generally agreed that the use of Bordeaux Mixture on potato foliage increases yields.

3 FOR TREE WOUNDS. Use Corona Tree Wound Dressing. Here is the ideal preparation which retains its protective coating longer, healing the wound in the shortest time possible. Will not injure or drive back living tissue.

OTHER CORONA PRODUCTS

CORONA MERKO - for treating seed corn
OATS DUST - for treating seed oats
COPPERCARD - for treating wheat seed
50% PLUS - for treating wheat seed
P. D. 7 DUST - for treating seed potatoes

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CHEMICALS

DIVISION OF
PITTSBURGH
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UNIVERSAL SPRAYERS for SMALL GROWERS. We have a power sprayer to fit your needs should you have only a few trees. Write for descriptive folder.

UNIVERSAL POWER SPRAYER CO.
PLYMOUTH MICHIGAN

GRAFTWAX—TREE HEALANT Heals pruned stubs, diseases, blights, wounds. Waterproof, adhesive. Excels in grafting. Hastens union of stock and scion. **SMEARED ON COLD.** Scions dipped in melted Graftwax keep indefinitely prolonging grafting season. Curative tree cavity filler. **GRAFTWAX SEALS AND HEALS.** 1 lb., 60c. 2 to 6 lbs. 50c lb. 12 lbs., \$5.00. Postpaid. Free Sample.

CLARION DEVELOPMENT COMPANY, INC., Dept. A, Clarion, Pa.
MARCH, 1941

COVER CROPS

(Continued from page 20)

grass, answers the purpose. Millet is sown at the rate of 40 to 50 pounds per acre. If combined with soybeans the rate is one bushel of the latter and 15 pounds of millet. Sudan grass, like millet, is somewhat objectionable in dry years due to competition with the trees, but it makes a heavy yield if well fertilized. It is seeded at the rate of 25 to 30 pounds per acre. It may even be used after it is apparent that soybeans are not going to make a satisfactory crop.

Buckwheat finds wide usage where the climate is moist and cool, but it is very sensitive to frost. It does quite well on infertile sandy loams, but under such circumstances the land should first be fertilized. It may be seeded as late as the latter part of July and still mature a seed crop. This crop is also a valuable source of honey during the fall months, which gives it added value as an orchard crop. It is seeded at the rate of six pecks per acre.

Winter Crops

If possible, it is well to have two cover crops a year, thus gaining more organic matter and keeping the ground covered most of the time. Rye, wheat, vetch, crimson clover, sweet clover, alfalfa, and recently rye grass, all come in for favorable mention.

Rye is about as near a universal cover crop as any that can be mentioned. It makes a fast growth in the spring and this at once is its greatest advantage and disadvantage, as compared to wheat. If the land is wet and difficult to get on, the rye may joint out and mature and as a result dry the surface soil excessively. It is an ideal winter crop where erosion is a factor. It is sown at the rate of eight or 10 pecks per acre. When sown with vetch, as is common some places, 18 to 20 pounds of the latter can be used. Like buckwheat, vetch may be allowed to ripen and reseed itself.

Sweet clover is usually heralded as a good soil improver and a valuable cover crop. It should be sown early in the spring at the rate of 15 to 20 pounds of seed per acre and plowed under the following spring, about May. Davidson of New Jersey estimates that a good crop of sweet clover about 13 inches high, when plowed under, would soon add to the soil about as much available nitrogen as an application of 12 tons of stable manure or 200 pounds of nitrate of soda per acre. Tree hoppers and stink bugs seem to thrive in it and sometimes this causes considerable damage to young trees.

The exact time of plowing or disking a cover crop under has not been

(Continued on page 35)



Take your pick of the three STAUFFER SULPHURS especially recommended for controlling Apple Scab:

- "MAGNETIC-70" Concentrated Sulphur Paste
- "3-M" Magnetic Micron Measured Sulphur (Dry Wettable)
- "MAGNETIC SPRAY" Wettable Sulphur (Dry Wettable)

All three have the highest fungicidal efficiency and are the most practical sprays for controlling Apple Scab because they give maximum protection at a minimum cost.

With a background of over 50 years experience in the manufacture of Agricultural Sulphurs, it is only natural that STAUFFER is headquarters for Sulphur spraying and dusting information. Let our pathologists answer your questions. They devote their full time to work in the field and are ready to solve your problems.

STAUFFER SULPHUR PRODUCTS

- "MAGNETIC-70" Concentrated Sulphur Paste
- "3-M" Magnetic Micron Measured Sulphur
- "MAGNETIC SPRAY" Wettable Sulphur
- "CROWN" Brand Wettable Sulphur
- "MAGNETIC" Catalytic Sulphur
- "ELECTRIC" Super-Adhesive Dusting Sulphur
- "MAGNETIC" Humidust

STAUFFER CHEMICAL COMPANY

420 Lexington Avenue, New York, N. Y.
230 N. Michigan Avenue, Chicago, Ill.
624 California Street, San Francisco, Calif.
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BUY SULPHUR BY STAUFFER

95% U. S. No. 1! 25 Bushels A Tree!

●WHAT A RECORD

Earl Byers of Vincennes, Indiana used KOLOFOG and KOLODUST to produce this crop of Golden Delicious apples which won first prize for him in the 1939 Indiana Quality-Plus Apple Contest.

KOLOFOG and KOLODUST . .

twin brothers of control, gave him a non-caustic, all-weather program which knocked scab right out of the orchard but yet was mild enough to avoid russetting.

Try KOLOFOG and KOLODUST . .

See how they work to give you profitable results every time.

●KOLOFOG ●KOLODUST

SAN FRANCISCO, CALIF.



JACKSONVILLE, FLA.

NIAGARA SPRAYER AND CHEMICAL CO. Inc.

MIDDLEPORT, NEW YORK



HOW EARL BYERS GROWS QUALITY-PLUS CROPS

"NINETY-FIVE per cent of the crop of 8000 bushels is U. S. No. 1 grade," reported G. W. Russell, U.S.D.A. inspector, on a block of Golden Delicious trees which besides bearing clean fruit yielded nearly 25 bushels per tree.

Such a remarkable record isn't made every year, so Earl Byers of the Dixie Orchards, Vincennes, Ind., who literally mothered these apples from bloom to harvest, submitted his story to the 1939 Indiana Quality-Plus apple contest. As a result he won the gold medal, signifying top honors, for growing the cleanest apples in the State.

"I wanted to report the Golden Delicious for several reasons," he said. "We had very complete records on this particular block, it had been very outstanding in production and had been about the hardest block we had to fight for scab and worms. When it had a very heavy bloom we decided to spare no expense in trying to produce a clean crop of apples."

Here is the way Mr. Byers modestly explains how he handled the temperamental Golden Delicious block:

"The trees were pruned up off the ground, spray and ladder ways were cut and a great amount of twig and weak wood thinning was done. This took about an hour to the tree but was a great aid to proper spraying. No dormant spray was applied because the block had a dormant spray the previous spring.

"The thinning included pulling and cutting all the wormy apples we could find after the first brood. The apples were thinned again during July, and the heaviest limbs were thinned again at the time of proping or about August 5.

"Nitrate of soda was applied at about five pounds per tree by putting it through a slow running duster and making a round to the row, putting most of it under the spread of the limbs.

"Scab covers were put on with the wind, and we used dust whenever the spray cover was over three days old and we were caught by rain. Spray covers were applied at a pressure of about 550 pounds. Dust covers were applied with a duster mounted on a Model A Ford chassis. On the follow-up spray and on covers one, four and five we put both men on the ground to take a row apiece and spray first from the inside and then cover the entire tree. We found this to be the best way of being sure that the tree is thoroughly covered. On the other covers one man sprayed from the ground and the other from a tower on the sprayer. If the wind

YOUR BEST ORCHARD DEFENSE!

DORMANT

KLEENUP Soluble

• ELGETOL

• Nitro KLEENUP Powder

ORTHO SPRAY CHEMICALS

Enable you to have balanced spray schedules from dormant through harvest sprays.

SCAB

FLOTATION SULPHUR

• ORTHOX

PRE-HARVEST

• FRUITONE

CODLING MOTH

LEAD ARSENATE

• ORTHOL-K

• COPOSIL

• BOTANO-N

Write For
Descriptive Literature



CALIFORNIA SPRAY-CHEMICAL CORPORATION

"The ORTHO Company"

Richmond, Calif.

Elizabeth, N. J.

Reg. U. S. Pat. Off.

was high, the spraying was done with the wind but whenever possible they sprayed up one side of the row and back the other.

"The spray program was primarily a tank mix program. On the scab covers we were trying to prevent infection rather than cure it and to this end we used a non-caustic sulphur fungicide spray having good sticking and long persisting qualities, which would not be washed off by rain. Our sulphur fungicide dusts were selected with the same aims in view. As we frequently find it necessary to dust in the rain, it was essential to have a dust material that would penetrate the rain and stick to the foliage.

"Total costs represented an outlay of \$4.21 per tree or about 19 cents per bushel. Only a very heavy crop of a fair priced apple would justify such expenditure."

A heavy crop of Golden Delicious, properly managed, did justify the expenditure and, more than that, Mr. Byers' faith in himself to produce quality-plus apples.

PARTNERS PRODUCE NEW YORK IMPERIAL CHERRY

FIFTEEN years ago, two resourceful cherry growers of York, Pa., decided that the sweet cherry industry of the East needed a shot in the arm.

Best remedy they could think of was a new variety which growers could raise without difficulty and which could be marketed at a profit.

As a result, the York Imperial cherry was born and has been patented by Horace B. Faber and John A. C. Ziegler, Jr., co-owners of the new cherry.

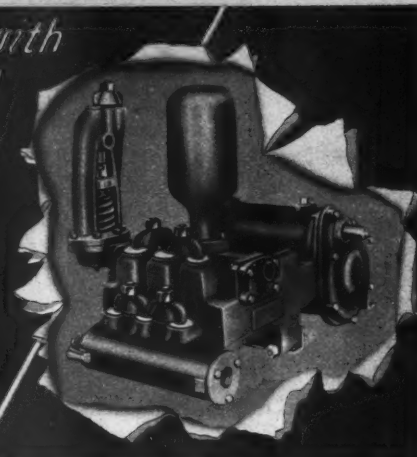
The cherry, which is named after the York Imperial apple, is a cross between the sweet varieties Napoleon and Schmidt.

According to Ziegler and Faber, the new variety is hardy, self-pollinizing, and prolific, and the berries are excellent for eating, canning, and shipping.

Whether this variety will continue its fine performance under different conditions of climate and soil remains to be seen. Both Faber and Ziegler hope it will, for they realize the Eastern sweet cherry industry needs help to survive.

Standard RIDE OR WALK
GARDEN AND SMALL FARM Tractors
 Powerful 1 and 2 Cylinder Tractors for Small Farms, Gardeners, Florists, Nurseries, Fruit and Poultrymen.
FOUR MODELS
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Cut spraying costs with **VICTORY** the high pressure **IRON AGE** PUMP



When spraying costs come down, crop profits go up. That's why large and small growers everywhere praise the cost-cutting performance of the high

pressure, easy working Victory Pump—heart of every Iron Age Sprayer. Long life, slow speed Victory is horizontally designed for working pressures up to 1000 P.S.I. ... its high pressure atomization makes every drop of insecticide count. Built in five sizes—6, 10, 14, 20 and 37 gallons-per-minute capacities.



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**THE NON-CAUSTIC
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Prepare now for your dormant spray applications by getting your supply of ELGETOL. There are so few good days available for effective dormant spraying, that you cannot afford to be caught unprepared. See your dealer now or write for our spray chart which explains how much ELGETOL you will need.

Use ELGETOL for control of APHID, BUD MOTH, OYSTER SHELL SCALE, PEACH LEAF CURL, and as a ground spray control for APPLE SCAB and CHERRY LEAF SPOT; or ELGETOL can be used with oil to control both APHID and SCALE at the same time.

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STRAWBERRY VARIETIES

(Continued from page 23)

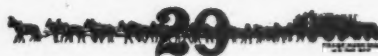
Rio Grande, from the Texas Agricultural Experiment Station, have replaced the older varieties, but in eastern sections they are too subject to diseases to be desirable.

LATE STRAWBERRIES IN NORTHERN AREAS

Besides raising late varieties such as the Redstar, growers can produce berries for the late season market by growing them at high elevations, growing them on heavy soil, growing them on a north slope, or mulching them. It is generally known that the higher the elevation the later the crop, but growers often do not fully appreciate how much later the crop may be. Probably on the average for each rise of 100 feet in elevation the crop matures one day later. In western North Carolina at 3000 feet elevation the crop is about 30 days later than in eastern North Carolina. Last June at an elevation of 1500 feet, I saw, in the western part of the Catskill Mountains in New York, the Fairfax about 15 days later than near the Hudson River just a few feet above sea level.

Mr. Eggert has published this past summer in the Michigan Quarterly Bulletin very interesting figures on the effect of a clay soil as compared with a sandy soil on season of ripening. He found a delay of about four days in the ripening of berries on clay soil. He also compared the ripening on a north slope with that on a south slope and found that the crop ripened about 10 days later on the north than on the south slope. Still another comparison was between mulched and unmulched rows in the same field. The crop from mulched rows ripened 10 to 14 days later than that on the unmulched.

The above records indicate how growers can distribute their crop over a much longer season (1) by growing part of their strawberries on clay and part on sandy soil, (2) by growing part on a north slope and part on a south slope, (3) by leaving the mulch on part as late as possible and by thinning it over the rows on part as early as possible, and (4) by growing part at the lowest elevation having good air drainage that they have and part at the highest elevation. Growers can also grow late varieties such as the Redstar which is 14 to 21 days later than the Howard 17 (Premier). Though, of course, few growers have all the conditions mentioned above as affecting the season of their berries, all growers can grow early and late varieties and all can take off the mulch at successive periods in the spring to affect the season.



BORAX—BORIC ACID

Borax or Boric Acid—for the effective control of BORON DEFICIENCY DISORDERS in apple orchards.

Write for your free copy
"Borax, the Ounce of Prevention"

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STRAWBERRIES

PAY

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NEWEST DEVELOPMENT IN SWEET CHERRIES

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Hardy, Non-splitting, Good
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TWENTIETH CENTURY

Everbearing Strawberry

RECORD YIELDS—over 1,000 cases per acre first summer on April planting. LARGE, FIRM, GOOD SHIPPER, HIGH QUALITY. Topped Salt Lake market 5 years—brought \$2.00 case on Los Angeles market 1940. Plants for sale only by originator.

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Lydia Pinkham's Compound is WELL WORTH TRYING!

COVER CROPS

(Continued from page 31)

too well worked out for orchards. In theory it would be best to incorporate it with the soil at least two or three weeks before the active period of vegetation, so that decomposition would be under way. The greener the crop at time of plowing, the more rapid the decomposition. The summer cover should reach full development, or in some cases it is allowed to mature and remain as such on the land overwinter. There would be a greater gain if a winter crop were sown, however.

The point to emphasize in the end is that if the cover crop system is adopted the land on which the crops are grown should be treated the same as though it were used for a bumper farm crop. Liming, complete fertilizer where needed, proper preparation of a seedbed, timely seeding, and turning it under when at its maximum growth should be religiously practiced. By so doing the cover crop system will gain excellent results with stone fruits and small fruits and under certain conditions, especially with young trees, for apples. The alternative of the mulch system is another story and a worthy one, but has no place in this discussion.

OPPORTUNITY KNOCKS

WITH national defense work so much in the limelight nowadays, many desirable employment opportunities in non-defense industries are going unfilled because of a lack of attentiveness on the part of the job-seeker.

This is particularly true in the field of servicing shade trees, according to Martin L. Davey, ex-Governor of Ohio and president of the Davey Tree Expert Company of Kent, Ohio.

"The tree servicing field," Davey points out, "offers permanent positions and rapid advancement to its workers. The work, while relatively strenuous, is exceptionally healthful. Then, too, it offers splendid opportunity for extensive travel."

Qualifications for the work, Mr. Davey says, include a good practical education, ability to pass a thorough physical examination, and the quality of not being afraid of a little hard work. Age limit is 18 to 26 years.

Insofar as the Davey Company is concerned, applicants need not even leave their homes to apply for the positions which are open. This may be done merely by writing for a qualification blank which will serve in place of a personal interview.



Martin HUMMER ORCHARD WORKER

Levers adjustable. Can be set down, so as not to strip limbs and fruit.

Every fruit grower, large or small, should have a MARTIN HUMMER—Gilbert Meister, Vice Pres. American Fruit Grower, who uses Martin in his own orchards. Perfect tool for sensitive Row Cultivation, Terracing, Ditching, Irrigation, Spray Pipeline Trenching, Digging, Cleaning Ponds.

10 DAYS TRIAL
Use a HUMMER 10 days in your own orchard work. Then if you're part with it, we'll refund every cent.

Steel Blade Extension works close to trunks as desired. Quickly attached or cleaned off.

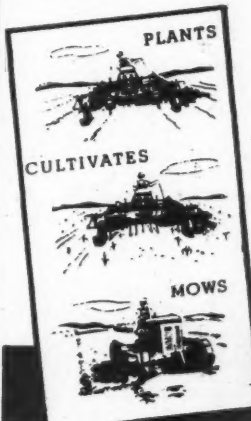
Write for free illustrated folder
Owensboro Ditcher & Grader Co., Inc., Box 18, Owensboro, Ky.
MARCH, 1941

"Man - was I surprised when I learned the low price of CLETRAC TRU-TRACTION* OUTFIT!"



Model HG Cletrac—18 H. P. on the drawbar—22 H. P. on the belt

***TRU-TRACTION**
means power on both tracks at all times.



YOU'LL be surprised, too, at the low cost of a Cletrac Model HG with Cletrac's Tru-Traction. The price you'll pay is little more than that of an ordinary wheel tractor. But a Cletrac HG costs less to own—less to operate. That's because Tru-Traction—power on both tracks at all times—puts an end to costly hold-ups in farm work. With Tru-Traction you can plow, plant and cultivate on time instead of waiting for soil and weather conditions to be just right. You can plan your work and work your plan—on schedule—12 months in the year.

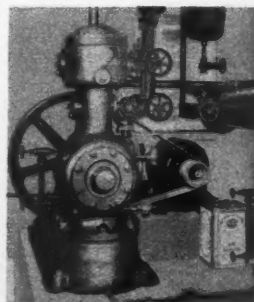
Tru-Traction is just one of the exclusive operating features that have made Cletrac Model HG such a favored tractor. The choice of three widths—31-inches for orchard and narrow rows—42-inch for regular farm use and 68-inch for general use and row crops—give you the width that suits your conditions best. A line of attached tools—planters, cultivators, weedeers, mowers, sprayers, etc.—is available for the Cletrac HG. Remember—no other tractor can give you Tru-Traction. Go to your nearest Cletrac dealer and see how Cletrac Tru-Traction Outfit can perform for you.

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CULTIVATED BLUEBERRIES, LARGE! DELICIOUS! Productive! Ornamental! Very profitable! Best varieties! Strong plants! Reduced prices. Catalogue. FRANKLIN COUNTY NURSERIES, Greenfield, Massachusetts.

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Train him until he stands a picture of perfection, a living statue of show-stopping beauty. Keep him exercised daily. Tip-toe trot him where there is gravel to keep posterns high and tighten his toes. Groom him daily for a perfect coat.

Then take him off to the show and enjoy the exciting competitive spirit, the richly informative contacts in any Dog Show. Let us help you. Send us your questions or showing, breeding, and raising dogs.

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SILK HOSIERY

BEAUTIFUL SILK HOSIERY, 5 PAIRS \$1.00 (TRIAL 25¢). Three exquisite full-fashioned \$1.25. DIREX, AF346W Broad, Savannah, Georgia.

STRAWBERRY PLANTS

STARTLING NEW STRAWBERRY—MAJESTIC, PAT-ented October 24, 1939. Has been thoroughly tested four years by experiment stations, nurseries and numerous growers in eight states. Tests proved extraordinary yield, size, flavor and shipping quality. Free from leaf spot and other diseases. Plants inspected. Plants priced on request. E. L. RUSSELL, Jonesville, Virginia.

BLAKEMORE, DUNLAP, KLONDYKE, AROMA, DOR-sett Strawberries: 500, \$1.25; 1,000, \$2.25. Fairfax, Premier, Catakill: 500, \$1.50; 1,000, \$2.50. Gem Everbearing: 100, \$1.00; 500, \$2.75. SHELBY PLANT FARMS, Memphis, Tennessee.

SPECIAL! 200 YELLOW FREE BLAKEMORE OR Dunlap plants delivered \$1.00. Free beautiful colored Calendar Catalog quoting sensational low prices on strawberries and vineberries. WALLER BROS., Judsonia, Arkansas.

GEM EVERBEARING, 200 POSTPAID, \$1.00, THOU-sand express, \$3.00. Giant Victoria Rhubarb, 25 postpaid, \$1.00. Fresh dug, prompt shipment. WRIGHT NURSERY, Hamburg, Iowa.

WAYZATA EVERBEARING STRAWBERRIES, OR-iginator's true-to-name certified plants. Order early, stock limited. Prices on request. FRED BRADEN, Wayzata, Minnesota.

WAYZATA STRAWBERRY PLANTS, 1000—\$14.00; PER 100, \$1.75. Write for prices on larger lots. PINECREST GARDENS, Champlin, Minnesota.

YELLOW RESISTANT BLAKEMORE STRAWBERRY plants: 1,000, \$1.75; 100,000 lots \$1.60 per thousand. C. H. ROCHELLE, Kenton, Tennessee.

ONE MILLION YELLOW-FREE BLAKEMORE STRAW-berry plants, \$2.00 per 1000, other varieties. CHATTANOOGA NURSERIES, Chattanooga, Tennessee.

MILLIONS CERTIFIED YELLOW FREE BLAKE-more strawberry plants. Write for prices. R. R. McUMBER, Greenfield, Tennessee.

TREE BANDS

CHEMICALLY TREATED TREE BANDS, WRITE for prices and samples. M. A. KOEHLER Barry, Illinois.

USED SPRAYERS

USED BEAN, HARDIE, MYERS AND FRIEND sprayers, engine driven and power take-off models, priced right. KENNEY MACHINERY COMPANY, 301 West Maryland St., Indianapolis, Indiana.

VEGETABLE PLANTS

CERTIFIED, FROST-PROOF CABBAGE AND ONION plants. Cablage, All Varieties, Parcel Post Prepaid, 200, 65¢; 500, \$1.00; 1,000, \$1.75; Express collect \$2.50, \$2.00. Onion, All Varieties Parcel Post Prepaid, 50¢, \$2.00; 1,000, \$1.00; Express collect, 6.00¢, \$2.00. Prompt shipment, safe arrival, satisfaction guaranteed. Catalog free. UNION PLANT COMPANY, Texarkana, Arkansas.

WANTED

EXPERIENCED ORCHARD MAN. Real proposition for party who can qualify. Married, man preferred. Some general farming. E. M. WICKENS, Lorain, Ohio.

MARCH, 1941

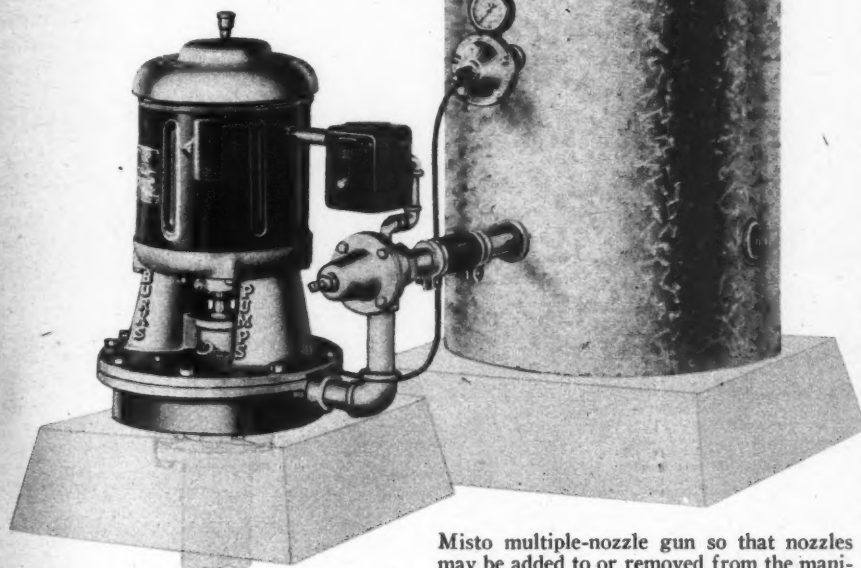
NEW

- DEEP WELL SYSTEM
- SPRAY GUN
- CAVITY FILLER

By **HANDY ANDY**

DEEP WELL SYSTEM •

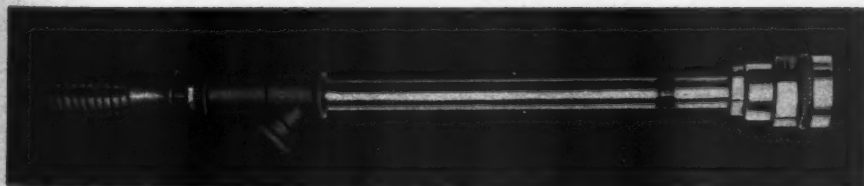
The Decatur Pump Company announces the Burks Educator Water Systems for deep wells that lift water 210 feet. Two types of pumps are available in the Burks Systems, the super turbine and the vertical centrifugal. With no moving parts below ground and only one above ground, trouble-free performance is assured. No vibration takes place, say the manufacturers, due to the stainless steel shaft being direct connected and not flexible coupled. Other features of



the system include automatic air volume control which introduces air directly to the tank and not through the pump, and Wagner motors with built-in overload protection and no radio interference. The impeller and volute are made of bronze and fully enclosed.

Misto multiple-nozzle gun so that nozzles may be added to or removed from the manifold as desired. Thus a 4-head Misto can be reduced to 2 heads, or increased to 8, 10, 12, or 14 as desired merely by detaching or attaching the extra nozzles.

PLOWING AND CULTIVATING PRACTICE AND SCIENCE is the title of a new booklet



SPRAY GUN •

An orchard spray gun that permits the operator to deliver as much spray liquid through the one nozzle as ordinarily can be put through an 8, 10, 12 or 14 multiple-nozzle head has been developed by The Hardie Manufacturing Company. This Hardie No. 202 spray gun, illustrated above, gives the same breakup of the liquid accomplished by the familiar smaller heads but with far greater volume when desired. It is said to be easier to handle than multiple-nozzle guns and much more accurate and economical in application, since the spray solution can be applied quicker and the user is able to direct the spray with precision and obtain a complete penetrating coverage. The gun is recommended for use only with pumps of 20-gallon capacity or greater.

Hardie has also redesigned the Hardie

CAVITY FILLER •

A tree cavity filler that can also be used as a tree wound dressing has been introduced by the Bartlett Manufacturing Company. It is known as "Barmanco." As a cavity filler it is combined with sand, Portland cement and water. In its original form it serves as a tree paint.

AMERICAN FRUIT GROWER

For SHEER SATISFACTION

You can't beat the feel of Atkins Pruning Shears as you work over trees after trees with hundreds of clean, precise cuts. Edge-holding alloy steel blade, scientific grip. Write for circular.



E. C. ATKINS
AND COMPANY
404 S. Main St.
Indianapolis, Ind.

ALWAYS KEEP HANDY
ATKINS PRUNING
SAW CATALOG

Your tool needs are well cared for from the Atkins complete line of pruning saws and shears. Send for catalog.

ATKINS

PRUNING SHEARS

BREADY Junior Tractor CULTIVATOR and LAWNMOWER



This Sturdy Junior Model is ideal for the professional truck gardener, nurseryman, grower of small fruits or the suburbanite with a few acres of garden and lawn.

This tractor can be equipped with either six-shovel steel cultivator or a two gang disc consisting of three 12-inch and one 11-inch disc on each side. Both the cultivator and the discs are adjustable and reversible to suit your needs.

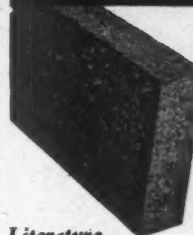
An important feature of this tractor is the lawnmower attachment. We can equip this tractor with either push or pull type lawnmower or a power driven lawnmower.

You will be surprised at the simplicity, ease of operation and low cost.

Write for descriptive literature on this handy tool.

BREADY TRACTOR AND IMPLEMENT CO.
201 Aurora Rd. Solon, Ohio

UNITED'S B. B. (BLOCK BAKED) CORKBOARD INSULATION



Assures maximum insulation efficiency at minimum cost. Moisture-resistant, compact, light weight, sanitary, structurally strong, flexible.

Write for particulars.

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CORK COMPANIES
WEST KEARNY, N. J.

Literature
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Bartlett Tools

Prune Easier



This Drop Forged Tool Steel nine inch Hand Pruner has a crucible steel blade and hardened hook. Unsurpassed. Special price \$3.25 prepaid. Ask for catalog showing a complete line of pruning tools, shears, saws, scrapers, etc.

BARTLETT MFG. CO. Detroit, Mich.
3044 E. Grand Blvd.

PAGE 37



ROADSIDE MARKETING



HERE'S A "DANDY" SELLING STUNT

By RICHARD T. MEISTER

CUSTOMERS at the roadside market of J. Andrew Cohill, whose 500-acre orchard lies neatly arranged on one of the Allegheny foothills overlooking the town of Hancock, Md., are pleasantly surprised the first time they stop.

For before they can say Jack Robinson they are given a generous cupful of "Andy's Dandy apple juice" which is made at the orchard. And if they want more they are told to help themselves.

This is the way Mr. Cohill, better known as Andy, lures his customers into his market and once there whets their appetite so they will be sure to buy his products.

It is clever selling at its best and as a result Andy does a fine business.

When the customer buys Andy's apple juice, he finds he can get it in either six-ounce jitney cans, 20-ounce cans, or gallon jugs. Prices are reasonable, and if sales are made in large amounts, discounts are offered.

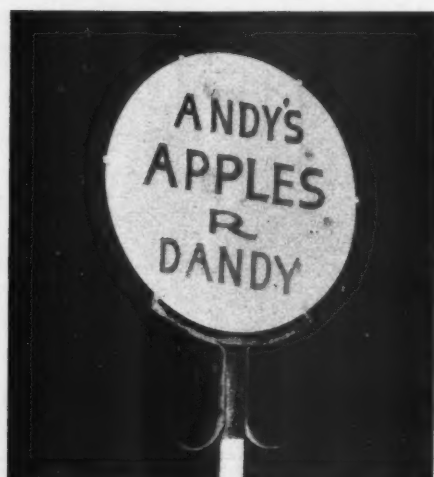
For instance, the jitney can sells for a nickel a can or six cans for a quarter. The 20-ounce can is sold for a dime or three for a quarter. The gallon jugs go for 35 cents and a dime is refunded if the jug is returned. According to Andy, jugs have been brought back from points as far away as Chicago and St. Louis, indicating how widely known and popular his stand is.

Three-fourths of the trade at the market, which is located on Route 40 in the valley below the orchard, is transient, as Highway 40 is a main route east and west and heavily travelled by tourists. Regular customers from Hancock and vicinity are few, so Andy does not solicit their trade by advertising in local newspapers.

He does advertise, however, by means of signs along the roadway on both sides of the market. On the west side at suitable intervals he has placed three round metal signs and one wooden sign about 10 by 15 feet in size. On the east side he has erected three more round metal signs and two wooden signs. Typical slogan painted on one of the signs is, "ANDY'S APPLES R DANDY."

Andy's roadside market is part of his huge 50,000-bushel cold storage, so he has no difficulty in keeping a plentiful supply of apples available at all times. About 1500 bushels of 2½-inch and up Delicious, Stayman, Grimes, York, Jonathan, Winesap and Rome of U.S. No. 1 grade are sold at the store every year. Andy says the type of package is important and he has tried out many different types in his search for the one package which would give best sales. Right now he likes the bushel basket and box for large amounts and the eight and five-pound mesh bags for smaller amounts. He has two or three other types of packages but he says they aren't very popular.

Standard prices for apples sold by the



Left—This is one of the signs which inform motorists on U. S. Route 40 that they are approaching the roadside market of J. Andrew Cohill of Hancock, Md. Mr. Cohill has erected three of these signs plus several wooden ones on either side of his market.



Below—Bushel baskets and boxes and mesh bags are the types of packages Andy likes best. In this picture Frank Oden, packing house manager, shows Morgan Cohill, orchard manager and son of Andy Cohill, a can of the apple juice which is made at the orchard.

bushel are \$1.50 for Delicious and anywhere from \$1 to \$1.25 for the other varieties. In the eight-pound mesh bags Andy sells the Stayman and Grimes for a quarter. In the five-pound mesh bags he sells the Delicious for a quarter. He finds his market is willing to pay more for Delicious than for other varieties.

The 7000 bushels of peaches Andy sells at his market are packed in four-quart baskets which sell for 20 cents a basket or, if too large for the basket, they are packed in half bushels which are priced at from 50 to 85 cents.

Other products sold at the market are apple butter, home-made fudge, honey, apple jelly and apple jelly flavored with mint which is a tasty preserve made by Mrs. Cohill.

By far the most outstanding feature of the roadside market is the clever way in which Andy merchandises his products. He thoroughly believes a good product is its own best advertisement and besides giving away apple juice Andy gives apples as samples to his customers.

Andy believes that the roadside market should be open the year around and scowls heavily when he hears of growers who are open until about April 15 and then close up tightly until the summer season.

These men, he asserts, aren't building up regular customers and what's more aren't teaching the consumer the habit of trading at roadside markets every day of the year. This is an obstacle roadside stores must overcome, Andy believes, if they are ever to build up the large number of customers which city stores have.

Andy is a firm believer in slogans and combines the word "dandy" with his name to produce catchy phrases. But he won't say his roadside market is dandy—he merely says it is a good store. He's being modest, for it is better than a good market; it is a dandy market, as dandy as the excellent apples and peaches Andy grows.

PAD AND PENCIL BUILD BUSINESS

Smart roadside market operators have found that it isn't hard to get customers to write their name and address on a pad of paper located at an easily accessible spot in the market. Thus, they say, it is possible to build up an excellent mailing list of potential customers to whom advertising literature can be sent.

"Built-In" Traction



Goodrich Brings You "The Best Tires On Earth" ... Greater Traction for Greater Savings!

● As a tractor owner, you know what traction means in dollars and cents. Get more traction than you've been getting and you're money ahead in fuel saved, in time saved, in extra work accomplished.

So we say . . . select your next tractor tires with traction in mind and Goodrich Hi-Cleat Silvertowns will be your choice. We sincerely believe this, because you can see for yourself the advantages that make for real super traction in this new tire.

Tread shoulders, for example,

are heavier and higher to reduce wasteful slippage. Giant over-size cleats working together in pairs, instead of singly, give you deeper bite, double grip. The tread bites in clean—and comes out clean . . . because it has no mud-catcher pockets. Because the tread is flexible the cleats spring the dirt free as they pull out of the ground. These cleats are so heavily reinforced they are guaranteed not to loosen or pull off!

Then consider wear and see how B. F. Goodrich leads again . . . with rub-

ber made Sun-Resisting by means of Duramin, the miracle discovery of B. F. Goodrich chemists which adds life and strength to tires. Here's real protection against sunlight, weather, barnyard acids.

Before you specify tires for a new tractor, before you order them for your present tractor . . . take a look at Goodrich, "the best tires on earth." Tops for traction, first for long life, they are No. 1 values of the Goodrich Jubilee, celebrating 70 years of being first in rubber.

B. F. Goodrich *Farm Service*
Silvertowns



Look! THIS BIG TRUCK TIRE
VALUE NOW AT YOUR
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← On one truck operation after another the new Goodrich Speedliner is today delivering 25% more mileage than even our own great 1940 Silvertown! Sells at regular prices.

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PROTECTION



No protection pays bigger dividends to growers than a comprehensive spraying program in which tested, proven insecticides are used.

And Dow—producers of insecticides for every purpose—is the logical source of supply for these materials. For years its *DA* DORMANT Sprays and "MIKE" Sulfur have been successfully used by progressive orchardists across the country. The *DA* DORMANT Sprays are more effective and will protect the crop against a greater variety of insects than any other dormant spray on the market. They are easy and economical to use.

"MIKE" Sulfur is non-caustic—more than 95% active sulfur and is 15 times finer than ordinary 325 mesh. "MIKE" Sulfur goes into water suspension immediately, stays free-flowing indefinitely and does not deteriorate with age.

Follow the practice of successful orchardists. Spray with proven insecticides for protection against crop infestation and consequent loss of income—it pays! Write for more complete information.

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